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Identifying At-Risk Drivers: A Survey of State Programs

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Abstract

Motor vehicle administrators have long realized that certain drivers present more of safety problem than others. Tests of static visual acuity, knowledge of the rules of the road, and on-the-road driving performance are used to ensure that each driver displays a specified level of competence before being licensed to drive. However, experience has shown that these tests alone are not adequate to detect all persons who might present a safety hazard to themselves and others when driving.

Concern that a driver's license could be obtained by persons who may not be competent to drive safely and concern for providing for the special needs of Virginia residents prompted the Virginia Department of Motor Vehicles to request that the Virginia Transportation Research Council conduct a study of ways to identify and deal with groups of persons whose driving behavior places them in an at-risk category.

Six groups of drivers who were hypothesized to be at risk were selected for study: motorcyclists, young drivers, older drivers, medically impaired drivers, substance abusers, and non-English-speaking and illiterate drivers. First, a literature review was conducted to determine whether decrements in driving ability and performance could be scientifically documented for these six groups of drivers. Second, six questionnaires, one for each group, were sent to the 50 states to gather information on whether these groups are handled differently than the general population. Further, those states with special practices concentrated on the six groups were asked to provide information on the laws and policies, procedures, and programs designed to deal with them.

FINAL REPORT

IDENTIFYING AT-RISK DRIVERS: A SURVEY OF STATE PROGRAMS

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(The opinions, findings, and conclusions expressed in this report are those of the authors and not necessarily those of the sponsoring agencies.)

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EXECUTIVE SUMMARY

Motor vehicle administrators have long realized that certain drivers present more of a safety problem than others. Tests of static visual acuity, knowledge of the rules of the road, and on-the-road driving performance are used to ensure that each driver displays a specified level of competence before being licensed to drive. However, experience has shown that these tests alone are not adequate to detect all persons who might present a safety hazard to themselves and others when driving.

Virtually every state has a system in place to identify persons who, over the course of their driving history, show themselves to be incapable of driving safely. Drivers who have a specified number or type of multiple traffic convictions or who are adjudged to be habitual offenders may have their driver's license suspended or revoked. Unfortunately, such penalties are imposed only after poor driving performance has been repeatedly demonstrated. The challenge for motor vehicle administrators is to identify habitual offenders and other drivers who may create a safety hazard before they and the motoring public are placed in peril.

Concern that a driver's license could be obtained by persons who may not be competent to drive safely and concern for providing for the special needs of Virginia residents prompted the Virginia Department of Motor Vehicles (DMV) to request that the Virginia Transportation Research Council (VTRC) conduct a study of ways to identify and deal with groups of persons whose driving behavior places them in an at-risk category. The first problem encountered in such a study, however, is defining the at-risk driver. Persons with a specified number or type of violation may be considered at risk; however, such a violation record indicates future violations, not future crashes. In addition, research has shown that drivers with particular characteristics, such as a particular age or medical condition, may be more likely to have crashes than other drivers, but not all such drivers are necessarily at risk.

Six groups of drivers who were hypothesized to be at risk were selected for study: motorcyclists, young drivers, older drivers, medically impaired drivers, substance abusers, and non–English-speaking and illiterate drivers. First, a literature review was conducted to determine whether decrements in driving ability and performance could be scientifically documented for these six groups of drivers. Second, six questionnaires, one for each group, were sent to the 50 states to gather information on whether these groups are handled differently than the general population. Further, those states with special practices concentrated on the six groups were asked to provide information on the laws and programs designed to deal with them.

Conclusions and Recommendations

General

From the literature review and the survey, a number of general conclusions and recommendations were developed.

1. There are no universally accepted categories of at-risk drivers.
2. There are no universally accepted parameters or measures to identify at-risk drivers.
3. There are no universally accepted means by which motor vehicle administrators issue, restrict, or deny a driver's license to at-risk drivers.
4. Knowledge of and the methods for dealing with at-risk drivers are in the fledgling stage of development.
5. Virginia has the opportunity to take a leading role in defining and developing the field pertaining to at-risk drivers.

Study Groups

A summary of the conclusions reached and recommendations made concerning the six groups selected for study follows:

1. *Motorcyclists.* In the event of a crash, motorcyclists are more likely to incur serious or fatal injuries than are occupants of other types of motor vehicles. Requiring the use of helmets and eye protection, having special testing procedures or licensing requirements, and providing or encouraging attendance at motorcycle operator courses are three ways in which states have dealt with this at-risk group.

Virginia is one of the few states that requires the use of both helmets and eye protection for motorcyclists, has special testing procedures, and provides for voluntary attendance at motorcycle operator training courses. Thus, Virginia is doing as much as or more than other states in providing for motorcyclist safety, and no further action regarding motorcyclists is recommended at this time.

2. *Young drivers.* Years of research and experience have shown that the crash and conviction records of young drivers are far worse than average. Although Virginia (like some other states) requires that a teenager successfully complete a state-approved course in driver education prior to being licensed to drive at age 16 or 17, young drivers remain an at-risk group. Several states have reduced crashes and convictions among young drivers by establishing a provisional licensing program. In these programs, young drivers are given a license with restrictions (e.g., a curfew prohibiting late-night driving) and they must drive violation free for a specified period of time before receiving full driving privileges. Some states have established a blood alcohol content (BAC) of less than 0.10% for charging young drivers with driving under the influence (DUI), but this type of program has yet to be fully evaluated.

It is recommended that the DMV consider establishing a provisional licensing program for young drivers and investigate the provisions, restrictions, and procedures for such a program. It is also recommended that a feasibility study be conducted to determine whether a follow-up driver education course on emergency maneuvers would be desirable. No state currently has such a course, so this course should be viewed as a possible future innovation rather than an immediate need.

3. *Older drivers.* One of the findings of this study was that a portion of the elderly population has age-related problems that may inhibit their ability to drive safely. Only 10 states have special licensing requirements for older drivers. Vision problems are especially pronounced in some older drivers, but a test of static visual acuity under well-lighted conditions is inadequate to identify persons experiencing vision problems that affect driving.

It is recommended that Virginia investigate using visual acuity tests under varying lighting conditions for older drivers. Further, since dynamic visual acuity is more closely related to the driving task than is static visual acuity, research should be carried out to determine if a test of dynamic visual acuity exits that could be adapted for use in the licensing and renewal process. It is also recommended that the DMV consider modifying its all-or-nothing approach to licensing drivers. Restricted licenses prohibiting driving under specified circumstances (e.g., darkness, peak traffic hours, or a specified distance from home) may be an effective means of limiting the risks while affording the privilege to drive. Such restrictions would need to be tailored to the limitations of each driver. These types of restrictions could also apply to all drivers with identified problems rather than just to the elderly.

4. *Medically impaired drivers.* Because medical conditions tend to affect persons to varying degrees, personalized evaluations are necessary to determine when medical impairments affect traffic safety. An open dialogue with the medical profession is an essential tool in identifying those with medical impairments to driving.

Virginia might benefit from administrative and legislative changes that would aid in identifying drivers with medical impairments. A survey of physicians should be conducted to determine if requiring physicians to report unsafe conditions would be an efficient and effective means of identifying these drivers. It should also be determined if there are other reporting sources (e.g., social workers and treatment centers) who should also be required to report. If research indicates that required reporting would be an effective identification process, sample legislation would have to be drafted. Enacting legislation to provide physicians (and possibly others) who file a report immunity from civil liability arising from such reporting should be considered.

5. *Substance abusers.* A number of persons who abuse substances in addition to alcohol are identified each year through the evaluations that follow DUI convictions; however, there are other substance-abusing drivers who need to be identified.

By using a system such as that recommended for the medically impaired, the DMV would be in a better position to determine the safe and unsafe driving practices of these persons if physicians were required to report the names of substance abusers to the DMV. Further, a statute could be enacted to require the reporting to the DMV of substance abusers identified by the courts through drug convictions that are not related to motor vehicles. The identified substance abusers could then be monitored to determine if they are capable of driving safely.

6. *Non–English-speaking and illiterate drivers.* No evidence was found to indicate that non–English-speaking and illiterate drivers were at risk. Nationally, most licensing efforts have concentrated on providing tests and manuals that accommodate for the lack of English reading ability.

Virginia uses oral examinations and examinations written in Spanish and Vietnamese; however, audio, Spanish, and Vietnamese versions of the driver manual are not provided. It is recommended that the DMV investigate the desirability and costs of providing such versions to facilitate learning the rules of the road by these groups of non–English-speaking and illiterate drivers. It is also recommended that the DMV initiate a study of persons with language difficulties to determine whether these deficiencies are reflected in their crash and conviction records.

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INTRODUCTION

Motor vehicle laws, regulations, and policies are executed with the goal of providing citizens with a safe travel environment. There is a consensus among safety, enforcement, and legal officials that even though the enforcement of traffic laws might reduce individual freedom, it is essential to the public safety. The goal of providing a safe travel environment for all persons using the highways can be achieved by curtailing the travel of those persons whose driving behavior places themselves and others in danger. The suspension of the driving privilege of operators who have proven to be such a threat is an accepted restriction of personal freedom. It has also been accepted that drivers who cannot pass particular physical tests, such as a vision test, should be denied a driver's license.

Ensuring a safer travel environment can also be achieved by developing and enforcing standards that improve highway facilities. The use of breakaway sign posts and energy-absorbing bridge abutments are examples of safe roadway features. In addition, a safer travel environment can be provided by requiring particular modifications to vehicles, such as safety belts, air bags, and reinforced passenger compartments. Despite disagreement on the timing, costs, and complexity of motor vehicle safety regulation, there has been general agreement that the benefits to society have outweighed the restrictions imposed on roadways and manufacturers.

The legality of safeguarding the public through restricting personal freedom is not so clear cut as is the legality of regulating roadways and vehicles. Motor vehicle administrators must walk a legal tightrope in imposing restrictions on persons. There is still debate whether mandating the use of safety belts or motorcycle helmets falls within the purview of public protection by government, even though the safety benefits of these devices have been demonstrated. Moreover, there is no universal agreement concerning the restriction of driving privileges based on physical or personal characteristics that may affect a person's driving ability and performance.

Motor vehicle administrators have long realized that certain drivers present more of a safety problem than others. Tests of vision, knowledge of the rules of the road, and on-the-road driving performance are used to ensure that each driver displays a specified level of competence before being licensed to drive. However, experience has shown that these tests alone are not adequate to detect all persons who might present a safety hazard to themselves and others when driving. In addition to prelicensing screening, virtually all states have provisions to suspend or revoke the license of drivers who have multiple traffic convictions or who are adjudged to be habitual offenders. Unfortunately, these measures are imposed only after poor driving has been demonstrated. It is more desirable to take action before drivers prove themselves unable to operate a motor vehicle safely. Although there is a need to identify at-risk drivers and take action before they commit violations or are involved in crashes, limits exist in predicting human behavior. Thus, driver licensing administrators are assigned the role of protecting the public but are provided only minimal means by which to carry out this mandate.

Concern that licensing agencies may be awarding a driver's license to persons who may not be competent to drive safely and concern for providing for the special needs of Virginia residents prompted officials of the Virginia Department of Motor Vehicles (DMV) to seek information on ways to identify and deal with particular groups of drivers that might be considered at risk. The DMV asked the Safety Team of the Virginia Transportation Research Council (VTRC) to undertake such a study. The first stage of the project was an investigation of the procedures used by other states to identify and cope with the total population of at-risk drivers through driver improvement programs. The results of this stage were presented in *A Survey of Driver Improvement Programs in the Fifty States*.

Identifying At-Risk Drivers

The first problem faced by researchers during this study was identifying at-risk drivers, for whom there is no generally accepted definition. Some of the groups that have been considered at risk include disabled drivers, chronic risk takers, drivers of relatively dangerous types of vehicles (e.g., all-terrain vehicles), drivers with various medical conditions, and drivers with various emotional problems. Persons have also been defined as being at risk because of their demographic characteristics. At one time, even the "accident prone" were considered an at-risk group. Few states have established criteria for the inclusion of persons in an at-risk group. The only drivers universally recognized as being at risk are habitual offenders. Nearly every state has a habitual offender program designed to remove dangerous drivers from the roadway. However, many states, including Virginia, do not use previous crashes as one of the criteria for including persons in this group.

One early task of this study was to consider and develop methods to categorize drivers based on those characteristics that would define a driver as being at risk. Persons with a specified number or type of violation may be considered at risk; however, such a violation record indicates future violations, not future crashes.

Further, traffic safety research has shown that drivers with particular characteristics, such as youth or advanced age or particular medical conditions, are statistically more likely to have crashes and be convicted of traffic violations than are other drivers. As a result, all drivers who share these characteristics are a part of the at-risk group; however, not everyone in a particular group is more likely than the general population to have an accident. For example, it is well documented that male drivers under 25 are significantly more likely to be involved in crashes and incur convictions than are older male drivers. On an annual basis, though, a high percentage of young male drivers will not be involved in a crash or receive a traffic conviction. Nonetheless, some states have moved to restrict the driving privileges of young drivers by imposing a lower blood alcohol concentration (BAC) level for driving under the influence of alcohol (DUI) or by issuing a probationary license that prohibits late-night driving.

A second early task of this study was to compile of a list of the groups generally thought to be at risk. These groups were then categorized based on their main characteristics, without any judgments being made concerning the fairness or defensibility of their inclusion. These categories are not mutually exclusive, and it is possible to be in two or even three at-risk groups at once. These categories are:

1. *Medically at risk.* These drivers have medical conditions that may impair their driving ability. Included in this category are the visually impaired and those with epilepsy, cardiovascular disorders, musculoskeletal disorders, pulmonary disorders, and psychiatric disorders.

2. *Characteristically at risk.* These drivers share a characteristic in common with a group of drivers shown by previous research to have a statistically higher risk of accidents or violations than the general driving population. Included in this category are young drivers, older drivers, motorcyclists, non-DUI substance abusers, and persons undergoing a significant life change.

3. *Behaviorally at risk.* Drivers in this category have been convicted of moving violations. Included in this category are DUI offenders, habitual offenders, and those persons being treated through a driver improvement program.

Some driver groups are permanently at risk, some are transiently at risk (insofar as they are currently at risk but will not be at some time in the future), and some are conditionally at risk. Permanently at-risk drivers have conditions or characteristics that will never improve. For example, persons with a degenerative disease for which there is no known treatment enter the medically at-risk group when they become ill and remain at risk unless a treatment is developed for the disease. Transiently at-risk drivers enter the at-risk group, are at risk for a period of time, and then cease to be at risk. Young drivers, especially those under 21, are at risk, yet most of them are no longer at risk by age 25. Some groups contain drivers who could be either permanently or transiently at risk. These groups are conditionally at risk. Persons with diabetes are an example of the conditionally at risk: some are never able to control their disease, but others learn to control their disease.

PURPOSE AND SCOPE

Six groups of drivers who were hypothesized to be at risk were selected for study: motorcyclists, young drivers, older drivers, medically impaired drivers, substance abusers, and non–English-speaking and illiterate drivers. First, a literature review was conducted to determine whether decrements in driving ability and performance could be scientifically documented for these six groups of drivers. Second, six questionnaires, one for each group, were sent to the 50 states to gather information on whether these groups are handled differently than the general population. Further, those states with special practices concentrated on the six groups were asked to provide information on the laws and programs designed to deal with them. The information obtained was used to recommend methods of remediation for those at-risk groups.

METHODS

This study was conducted in three stages:

1. A literature review was conducted to determine whether decreased driving ability and performance could be scientifically documented for any of the six groups hypothesized to be at risk.

2. Other states were surveyed regarding practices used in handling these at-risk drivers. Questionnaires were developed and sent to specific motor vehicle agency personnel in each state as determined through a previous telephone survey. A follow-up telephone survey was conducted to collect information from states that returned incomplete questionnaires or failed to return their questionnaire.

3. The results of the literature review and the surveys were used to recommend methods of remediation for those at-risk groups.

RESULTS

Literature Review

Studies concerning the six groups hypothesized to be at risk were reviewed to determine if these groups, in fact, posed a greater safety risk than the rest of the driving population.

Motorcyclists

Because of the smaller size and mass of motorcycles relative to those of other vehicles, motorcyclists are at risk. Wulf, Hancock, and Rahimi (1989) reported that, in 1986, motorcycles accounted for 2.9% of vehicle registrations in the United States but were involved in 7.9% of fatal crashes. Further, in the event of a crash, motorcyclists are more likely to be injured or killed than are the occupants of the other vehicles involved in the crash.

One of the most effective protections for motorcyclists is a helmet. Although a helmet does little or nothing to prevent crashes, its use tends to prevent or limit the severity of head injuries in crashes. A Wisconsin study (Wisconsin Department of Transportation, circa 1980) noted that unhelmeted motorcyclists involved in accidents suffered 40.6 head injuries per 100 riders, whereas their helmeted counterparts had 23.6 head injuries per 100 riders. The Wisconsin data also indicated that unhelmeted riders had a head injury death rate of 2.3 per 100 riders as compared with a rate of 1.3 per 100 helmeted riders. Thus, unhelmeted riders involved in crashes were more than 70% more likely to incur head injuries or die from head injuries than were helmeted riders who were involved in crashes. A 1985 study conducted in Maine after its helmet law was repealed revealed similar findings; the researchers recommended the reinstatement of the state's mandatory helmet use law (Maine Department of Public Safety, 1985).

Wulf et al. (1989) found that the most common cause of motorcycle crashes was a violation of the motorcyclist's right of way by another driver. Research efforts have concentrated on increasing the conspicuity of the motorcycle and its riders, but these efforts have had limited success. There is only limited evidence that reflective garments increase the conspicuity of motorcycles and their riders (Olson, Hallstead-Nussloch, & Sivak, 1981). However, there is some support for the use of reflective sidewall tires to enhance the lateral conspicuity of motorcycles (Berg & Beers, 1978). Unfortunately, reflective sidewall tires do not help when the front or rear of the motorcycle is facing the other vehicle.

The most common motorcycle safety countermeasure implemented in the United States involves motorcycle operator training programs. These programs train operators in the handling skills needed for both normal and emergency situations. Leung and Reding (1987) and McDavid, Lohrmann, and Lohrmann (1989) showed that trained motorcycle operators tend to have fewer motorcycle crashes than untrained operators and trained operators also have fewer accidents and better driving records in other types of vehicles than untrained operators. However, at least part of the difference may have a basis in the self-selected nature of motorcycle operator training programs; that is, safer operators may be those who seek training and the less safe operators, who have a greater need for training, may choose not to attend a training program.

McDavid et al. (1989) concluded that training is not a significant predictor of accidents. In fact, increasing age and experience are the two factors most closely associated with a reduction in crash probability, with age being the single best pre-

dictor of motorcycle crashes. Quite simply, the older and more experienced the motorcycle operator, the lower the probability of the person being involved in a crash.

Young Drivers

It is a well-established fact that per licensed driver, persons in their teens through their early twenties have more crashes and more traffic-related convictions than the rest of the driving population (Evans, 1988; Maleck & Hummer, 1986; Nwankwo & Goli, 1989; Pelz & Schuman, 1971). Moreover, on a per-mile-driven basis, the driving performance of young persons is even worse because younger drivers tend to drive only slightly more than half as many miles as drivers aged 25 to 64 (McMurray & Paulsrude, 1982). It is clear that driving performance tends to improve as drivers age, mature, and gain experience. Maleck and Hummer (1986) noted that from the teen years, there is a steady decline in the frequency and rate of injury and fatal crash involvement through age 30; then, driving records remain relatively stable through middle age.

Several factors place young drivers at greater risk of being involved in a crash or incurring a traffic conviction than the rest of the population. Studies of young drivers indicated that lack of honed driving skills and limited driving experience contribute to the poor driving records of America's youth (Evans, 1988; Groeger & Brown, 1989; Pelz & Schuman, 1971). Yet there is no agreement in the literature on the magnitude of this contribution.

Evans (1988), Hilakivi et al. (1989), and Pelz and Schuman (1971) concluded that the driving records of young persons are worse than what would be expected based only on the level of driving experience. Boyd and Huffman (1984) concluded that lack of emotional maturity was a key factor contributing to the relatively poor driving records of young drivers—particularly with regard to DUI violations. Further, Boyd and Huffman (1984) concluded that young women are more emotionally mature than young men, accounting for the fact that the latter have worse driving records. However, Groeger and Brown (1989) stated that the driving problems experienced by young persons are primarily the result of lack of driving experience and are not characteristic of youthful behavior.

Other characteristics associated with the behavior of young persons may also contribute to their considerably worse-than-average driving records. Brown (1982) noted that young drivers are generally poor at identifying distant hazards, although they are as good as others at identifying near hazards. Young drivers tend to exceed the speed limit more frequently (Harrington & McBride, 1970), approach signalized intersections at a higher average speed (Konecni, Ebbesen, & Konecni, 1976), and follow cars more closely (Evans & Wasielewski, 1983) than other drivers.

Although the driving performance and records of young drivers have long been a documented problem, there is no single countermeasure that successfully addresses this problem. Driver education, warning letters, and provisional licensing are three strategies that have been employed with varying or questionable degrees of success. Driver education is an overt attempt to provide young drivers with the

necessary skills and at least some experience for driving. However, Ohlson and Stoke (1986) noted that even with driver education, young drivers are susceptible to incurring traffic convictions and crashes at a rate far higher than that of their older counterparts. One striking finding of the Ohlson and Stoke study is that graduates of commercial driving schools had substantially worse driving records than those who had graduated from driver education programs run through public or private high schools. Graduates of commercial driving schools could represent a self-selected sample of poorer drivers, but the results at least provide some evidence that commercial driving schools should be closely monitored to ensure that students receive adequate levels of driving skills, knowledge, and experience.

A driver education program that includes teaching emergency maneuvers is an idea that has been around since, at least, the mid 1940s. The basic concept for these courses is that drivers need real life, on-the-road experience to be prepared for the unexpected events that frequently occur during driving. The maneuvers most often proposed include those involving skid control, off-road recovery, controlled braking, and evasive skills (Matthias, 1976; Seals, 1979; Ulrich, 1978; Whitworth, 1977).

Skills for driving at night, in the fog, and on ice and snow have also been proposed as being needed by all drivers. The National Safety Council has been teaching a winter driving course for many years at Stevent Point, Wisconsin. A special course developed at the General Motors Proving Grounds was shown to be effective in reducing both the number and severity of crashes involving police officers (Whitworth, 1977).

Although the idea of an advanced or emergency course has been discussed and several courses have been developed and implemented; there has been a paucity of work in the area of using these courses for young drivers, although they may be the group most in need. The two major reasons the public schools have not implemented these courses concern safety and costs. Cost considerations include equipment and facility costs, as well as liability costs. Safety considerations have to do with ensuring that students, instructors, and the public are not injured by class activities.

A warning letter sent to youths receiving two traffic-related convictions had a small impact on traffic safety. The receipt of a warning letter had no impact on the average time between accidents (Ayers, 1979). Thus, even though fewer traffic violations is one objective of any traffic safety countermeasure, the warning letter had no impact on the more important measure of accident involvement.

Studies of provisional licensing programs have generally shown that these programs have the potential to enhance traffic safety. McKnight, Hyle, and Albrecht (1983) found that the provisional licensing program in Maryland resulted in a 10% reduction in traffic convictions and a 5% reduction in accidents for drivers aged 16 or 17. Maryland also found that the nighttime driving restriction was ineffective in reducing nighttime crashes by young drivers.

A 3-year provisional license, which is issued to young drivers in Michigan, was also effective in reducing their accident and conviction rates (Eavy, Edwards, &

Lee-Gosselin, 1986). Most noteworthy is the fact that the researchers found that there was a 50% reduction in convictions for the more serious moving violations, including all DUI offenses.

Older Drivers

The frequency of crashes is highest for teens and declines steadily as age increases (Cerrelli, 1989; Hawley & Tannahill, 1989). However, on a per-mile-driven basis, accident rates begin to increase as drivers reach 60 to 70 years of age (Hildebrand & Wilson, 1990; Transportation Research Board [TRB], 1988). Thus, in terms of accidents per licensed driver, older drivers are among those with the best driving records (Cerrelli, 1989; Hawley & Tannahill, 1989). Yet on a per-mile-driven basis, older drivers are more at risk than their middle-aged counterparts and may even be more at risk than drivers in their teens (Hildebrand & Wilson, 1990; McKelvey & Stamatiadis, 1989).

One consistent finding in the literature is that old age alone is not an adequate predictor of driving performance (Ranney & Pulling, 1990; TRB, 1988). In fact, a recent study found that the best of the elderly drivers performed as well as the best of a group of middle-aged drivers (Rossi, Flint, & Smith, 1989). However, the researchers also found that virtually all of the worst performers in an experiment they conducted were in the elderly group. Thus, the effects of aging that influence driving ability appear to affect some at a younger age and/or to a greater degree than others.

Ranney and Pulling (1990), Rossi et al. (1989), and TRB (1988) found that although average driving performance levels begin to decline at around 60 to 70 years of age, there is an increased variation in performance in the elderly group. Hence, a substantial portion of the elderly group maintain the ability to drive safely.

A consistent finding in the literature is that the elderly tend to drive fewer miles on an annual basis than those aged 20 to 60 (Hildebrand & Wilson, 1990; McMurray & Paulsrude, 1982). Further, there is evidence that elderly drivers reduce their use of major highways (Hildebrand & Wilson, 1990) and limit their driving to daylight hours only (Cerrelli, 1989; Mortimer & Fell, 1989) more than do other drivers. The obvious benefits of these self-imposed driving restrictions are that the elderly's frequency of crash involvement is relatively low (Cerrelli, 1989; Ranney & Pulling, 1990) and the elderly are underrepresented in nighttime crashes as compared with their younger counterparts (Mortimer & Fell, 1989). Unfortunately, however, the older drivers who show evidence of having driving problems seem to be unaware of their problems and, therefore, do not limit their driving any more than do other older drivers (Rossi et al., 1989).

Many researchers have hypothesized that vision problems associated with the aging process contribute to the relatively high risk for crash involvement by elderly drivers (Mortimer & Fell, 1989; Rossi et al., 1989; TRB, 1988). Hildebrand and Wilson (1990) reported that the Canadian Association of Optometry estimated that 90% of all driving decisions are based on what the driver sees; however, older

drivers see less well than do others (Evans & Ginsburg, 1985; TRB, 1988; Weale, 1963). Elderly drivers do not adapt as well to darkness as do other drivers (Hildebrand & Wilson, 1990), and one study noted that drivers aged 65 and over have an average static visual acuity of 20/140 in low light conditions (Yanik, 1986). Among the elderly there is a general decrease in pupil size and an increase in the scattering of light across the retina (Mortimer & Fell, 1989). Further, with age, there is an increase in the effects of glare and in the amount of time it takes to recover from the effects of glare (Pulling, Wolf, Sturgis, Vaillancourt, & Dolliveu, 1980). Although Henderson and Burg (1974) found that poor visual performance was associated with accident involvement, Lange and Gersten (1989) concluded that there is no empirical evidence to support the hypothesis that poor vision causes poor driving.

Static visual acuity under well-lighted conditions, which is the type of vision tested by DMVs in all 50 states, may not be a good measure of the types of vision that most affect driving (TRB, 1988). Hildebrand and Wilson (1990) indicated that there is a need to develop and implement a vision test that requires more than 20/40 static visual acuity under good light conditions viewing high-contrast letters. Evans and Ginsburg (1985) suggested that contrast sensitivity, or the ability to perceive objects against varied backgrounds, is important to driving. Waller (1987) noted that dynamic visual acuity, or the ability to perceive moving objects, appears to be closely related to the driving task. Unfortunately, however, these studies also noted that there are no tests that accurately predict driving performance based on vision characteristics alone.

There is also evidence that the elderly do not, on average, process information as quickly as do other adults (Canestrari, 1963; Esidorfer, 1965; Ranney & Pulling, 1990; TRB, 1988). Some researchers also hypothesized that the elderly drive more slowly and cautiously than others in an attempt to compensate for their relatively slower perception and reaction speeds (Case, Hulbert, & Beers, 1970; Ranney & Pulling, 1990). The results of research indicate that slower processing skills may be related to the accident and violation rate of elderly drivers.

Although the elderly tend to restrict their driving in high-volume and risky traffic situations, they are overrepresented in crashes occurring in traffic and at intersections (Cerrelli, 1989; Hildebrand & Wilson, 1990). The elderly are more often cited for failing to yield the right of way to other vehicles in crashes than are their younger counterparts. They are also more often found at fault for causing crashes than are other drivers—including drivers under 25 (Cerrelli, 1989; Hildebrand & Wilson, 1990). Further, as compared with other drivers, the elderly are involved in proportionately more multivehicle collisions and fewer single-vehicle crashes (Cerrelli, 1989; Hildebrand & Wilson, 1990; Mortimer & Fell, 1989). The elderly are also overrepresented in crashes involving merging and turning maneuvers (Hawley & Tannahill, 1989; Hildebrand & Wilson, 1990; McKelvey & Stamatiadis, 1989).

Another factor that may account for the elderly's relatively high injury and fatal crash rates per mile driven is the fact that the elderly are more susceptible to

injury or death in a crash than are younger persons (Cerrelli, 1989; TRB, 1988). One report noted that a person aged 65 or older is more than three times as likely as a 20-year-old to die from serious injuries of equal severity (TRB, 1988). This susceptibility to injury is exacerbated by the fact that the elderly are less likely to wear their safety belt than are other age groups (Stoke, 1989).

Mortimer and Fell (1989) noted that the fatal crash involvement of elderly drivers, although higher on a per-mile basis than that of middle-aged drivers, is not a serious problem at this time. But evidence that the elderly population is growing and will continue to grow both in number and as a proportion of the total population (TRB, 1988) provides reason for concern. If the next generation of older drivers experiences the same level of physical problems as the current generation but fails to curtail driving exposure, then elderly drivers may present a vastly larger problem in the coming decades. There is some speculation that the next generation of elderly drivers will drive more than does the current generation. A continuation of the current suburban lifestyle will also yield a population of elderly drivers that will need, want, and be accustomed to driving more than today's elderly population.

There are few programs today that even attempt to deal with or identify problem elderly drivers. In fact, few states have differing licensing or renewal requirements for the elderly (Hawley & Tannahill, 1989). Although age alone is a poor predictor of driving performance, there is a vast amount of evidence to indicate that a portion of the elderly population is suffering from the effects of age that diminish the ability to drive safely. Pennsylvania has a unique approach to identifying problem elderly drivers. For most drivers, the Pennsylvania driver's license is renewed by mail. Each month, however, approximately 1,500 elderly drivers (most aged 70 and over) are sampled and required to pass a physical examination from a personal physician and an in-person license reexamination at a Pennsylvania DMV test center (Freedman, Decina, & Knoebel, 1986). Freedman et al. (1986) noted that 20% of the elderly drivers selected for reexamination do not complete the process. This accounts for the greatest proportion of license loss. Of those who complete the process, approximately 1% fail. Almost half of the failures involve vision problems, and the vast majority of the others involve neurological, circulatory, or other medical disorders. More than 20% of the elderly drivers who complete the process are issued new restrictions, which include requiring the use of corrective lenses, outside mirrors, or driving in daylight hours only.

The random nature of Pennsylvania's reexamination process presents potential problems. A random sample provides for an unfocused search. Even though it would be more effective to reexamine all drivers, or at least all elderly drivers (TRB, 1988), perhaps a better way to implement such a program would be to select elderly drivers who incur certain types or numbers of violations or crashes that may be related to the aging process. Further, a reexamination process that requires a personal physician to conduct a physical examination of a person just because his or her name was selected in a random process may place an undue financial burden on those selected for reexamination—particularly those who have shown no signs of improper driving. A physical examination costing $60 to $100 may be a small expense to middle and upper income elderly persons but could be a severe and even

prohibitive economic hardship to the less wealthy elderly population. Because minorities are disproportionately represented among the less wealthy groups, such a program could function to deny a driver's license to a disproportionate number of minority drivers based only on the fact that they are less wealthy than white drivers.

Medically Impaired Drivers

Freedman et al. (1986) noted that there are three classifications of medical impairments that may affect the driving task: (1) those that affect levels of consciousness, (2) those that affect judgment, and (3) those that affect the motor abilities of the driver.

Much of the research on impairments that may affect consciousness has concentrated on epilepsy and seizure disorders. LeBlang (1979) noted that persons with poorly controlled epilepsy, who are prone to lapses of consciousness, constitute a hazard to themselves and others when driving. Yet, LeBlang further noted that since the middle 1960s, there has been a movement to extend the driving privilege to persons who show that their seizures are under control. The researcher noted that the American Medical Association has recommended that a person be seizure free for a period of 2 years before being licensed to drive. Some states, however, have extended the driving privilege to persons who are seizure free for as little as 6 months.

Research studies have shown that persons with epilepsy have worse driving records than the general population (Janke, 1980; Maxwell & Leyshon, 1971; Popkin, Stewart, & Lacey, 1981; Popkin & Waller, 1989). Popkin and Waller (1989) noted that such persons known to the DMV have worse driving records than do those who are not known to be epileptic by the DMV. Thus, although the epileptic persons who were unknown to the DMV had driving records slightly worse than the average of the general population, there is no evidence that they create a greater driving hazard than those who are identified and yet are licensed to drive even in light of the condition.

Vision is an important factor relevant to the driving task. Research suggests that tests of static visual acuity be conducted under varying levels of illumination and that tests of dynamic visual acuity and contrast sensitivity be developed and implemented to ensure that drivers have the proper visual abilities necessary to drive safely (Hildebrand & Wilson, 1990; TRB, 1988). One relatively recent development in the field of visual impairment involved the use of the bioptic telescopic lenses. The American Optometric Association (1984) noted that there is no evidence to indicate that persons who use bioptic lenses cannot drive safely. Virginia is one of the states that has recently extended the driving privilege to persons who use a bioptic telescope. Applicants must pass an examination showing that they can drive safely while using these devices.

There is conflicting information in the literature on whether cardiovascular disease affects driving performance. Waller and Naughton (1983) found that driv-

ers with heart disease had lower overall crash rates than other drivers. They determined that one reason was that heart patients in their retirement years were able to limit their driving mileage and the circumstances in which they drove. Freedman et al. (1986) also reported that the majority of persons with heart problems limit their driving and present no greater risk than others when driving a motor vehicle. Waller and Naughton (1983) concluded, however, that at least some of the drivers with heart disease ran the risk of having an episode while driving and, therefore, some heart patients may present a risk to themselves and others while driving.

In a later study, Waller (1987) found that drivers with heart problems had a higher crash rate than others. Waller noted that a problem in determining the relative level of risk for drivers with cardiovascular problems is the fact that these drivers tend to be older than the general population. Thus, vision problems associated with the aging process—particularly reduced visual clarity, color perception, and dynamic visual acuity—may confound the relationship. Waller (1987) concluded that persons with heart disease who have the greatest risk of having a heart episode involving loss of consciousness present the most serious potential hazard to traffic safety.

A report by the National Highway Traffic Safety Administration (NHTSA, 1980) indicated that certain metabolic conditions may impair a person's ability to drive safely. The report concluded that if the condition threatens the consciousness of the driver, it can cause a significant safety hazard.

Neurological disorders, or at least a particular degree of certain neurological disorders, may also affect safety. However, NHTSA (1980) noted that neurological disorders, like most medical conditions, need to be evaluated on an individual basis.

Mental retardation and mental illness may also affect traffic safety. However, the relationship between these conditions and traffic safety is unclear (Freedman et al., 1986; Waller, Naughton, Gibson, & Eberhard, 1981). The literature suggests that in these cases an individual evaluation seems appropriate when granting, restricting, or denying the privilege to drive.

Finally, motor ability may be affected in numerous ways, which in turn may affect the ability to drive safely. The absence of limbs and the loss of the use of limbs are impairments recognized by motor vehicle administrators as having safety implications. Generally, if a person can pass a driver licensing examination using special adaptive equipment, a restricted driver's license is issued. In fact, studies have shown that physically impaired drivers have accident and conviction rates similar to or lower than other drivers (Dreyer, 1973; McFarland, 1968; Ysander, 1966). However, one study noted that male drivers with handicaps are more prone to have fatal or injury crashes than is the general population (Dreyer, 1973). Perhaps the higher rate of injury or death in crashes is a manifestation of a greater susceptibility to injury than an indication of accident involvement risk. On the other hand, Negri (1978) reported that drivers with handicaps have a higher accident rate, in terms of accidents per driver, than other drivers. However, Dreyer (1973)

concluded that differing licensing standards are not justified on the basis of possessing a handicap alone. NHTSA (1980) also concluded that those with limited mobility—particularly those whose condition is stable over the years—are able to adapt to individual circumstances and successfully master the driving task.

Substance Abusers

Limitations or impairments of one's sensory or mental abilities may affect the ability to drive safely (Sussman, Salvatore, Huntley, & Hobbs, 1988). In fact, all 50 states have statutes addressing the drunk and/or drugged driver (Paltell & Booz, 1985). One important question that needs to be answered is whether the substance abuser is characteristically at risk even when not actively using drugs.

A study by O'Hanlon et al. (1983) indicated that the residual or hangover effect of flurazepam—which, like alcohol, is a central nervous system (CNS) depressant—affected the ability to drive safely. Evans (1988) pointed out that certain personality traits are correlated with poor driving records for young drivers. A study by Hilakivi et al. (1989) noted that certain personality traits (e.g., impulsive behavior or being prone to take risks) are associated with poor driving. Further, Jamison and McGlothlin (1973) found that drivers who had had no traffic crashes or moving violations were less likely to have tried drugs than were drivers with worse records.

Sussman et al. (1988) conducted an extensive literature review related to the effects of drug use on transportation safety. The study classified drugs into the five broad categories of (1) opiates, (2) CNS depressants, (3) CNS stimulants, (4) antidepressants, and (5) hallucinogens.

Opiates include drugs such as codeine, heroin, and methadone and have a high potential for abuse. Opiates dull feelings of pain and provide the user with a pleasant euphoria. Lethargy is associated with this classification of drugs.

CNS depressants include the commonly used drugs diazepam (Valium) and alcohol. CNS depressants make the user drowsy and may induce sleep. Further, they slow the processing of information, retard concentration, and reduce the alertness of the user. Some CNS depressants have residual, or hangover, effects that may outlast the active effects of the drug on the user.

CNS stimulants tend to increase mental activity and may restore some levels of concentration to fatigued persons. Cocaine and amphetamines are examples.

Antidepressants can impede the user's ability to form thoughts. This group of drugs includes Ecstasy, which produces vivid and organized hallucinations in the user.

Hallucinogens include drugs such as LSD and PCP and tend to distort the user's perception of internal and external reality. Hallucinogens also produce a disassociation from reality in which users mentally remove themselves from the consequences of their actions. Sussman et al. (1988) included marijuana as a relatively mild hallucinogen. Although marijuana and other cannabinoids may not always be

considered in the same classification as LSD and PCP, marijuana does distort sensory information.

When drivers are under the influence, impairments and limitations can be manifested in driving behavior with disastrous results. It has been estimated that about half of all fatal crashes in the United States involve alcohol (Fell, 1985; Jones & Joscelyn, 1978), and there is evidence that an additional proportion involve drugs other than or in addition to alcohol (Paltell & Booz, 1985).

NHTSA (1980) reported that the key to dealing with substance abusers is to identify them when they commit an impaired driving offense. Further, an effective general deterrence program would aid in the prevention of impaired driving by both substance abusers and those persons who exhibit a more casual use of alcohol and other drugs.

Non–English-Speaking and Illiterate Drivers

Since non–English-speaking and illiterate persons are unable to read the messages on traffic signs, one may question whether they possess the necessary attributes to drive safely. There has been little research carried out that can be used to establish a definitive answer to this question. In one study comparing persons who opted to take an oral driver's license examination (and presumably had reading skills lower than others) with persons who took the standard written examination, no significant differences were found in subsequent accident frequency or accident type (California DMV, 1973). Although several studies have found that persons who take an oral examination are more likely to fail the knowledge test than are those who take the written examination (California DMV, 1973; McMichael & Waller, 1973), there is no evidence that once a license is issued (i.e., once the test is passed) those who take an oral driver's license examination have a different level of driving performance than do others. In fact, Waller, Hall, Lowery, and Nathan (1976) found that the oral examination was an adequate tool for evaluating a driver's knowledge of the driving task.

Most of the literature on illiterate and non–English-speaking drivers involves the use of either a driver's manual or a licensing test designed to accommodate for their lack of English reading ability (see Fruchter, 1970; Henk, Stahl, & King, 1984; Waller et al., 1976). Thus, it is clear from the literature that most efforts concerning these groups involve finding ways to present knowledge of the rules of the road and to test for this driving knowledge in light of their reading limitations. It can be concluded from the literature that there is no indication that English reading ability should be a prerequisite for obtaining a driver's license, nor is there a precedent for such a requirement.

Analysis of Questionnaire Responses

Six questionnaires (Appendix A) were developed to obtain information from state motor vehicle agencies on the existence of special licensing and testing proce-

dures for the six identified at-risk groups of drivers. Questions relating to other issues involving these groups were also included (e.g., whether any research studies had been conducted or whether there were any data to show that these groups were more of a safety problem than were others).

As of May 1, 1990, responses had been received from 32 states. Not all of these states returned all six questionnaires, and some states returned questionnaires that were not fully completed. State motor vehicle agencies that did not return all of the questionnaires were contacted by telephone to obtain the information that was missing. In addition, all the states that had not returned a questionnaire were telephoned and asked to respond to an abbreviated set of questions (Appendix B) dealing only with special licensing and testing procedures, the existence of special education or training classes for drivers in the at-risk groups, and whether legal or medical provisions existed that treated these drivers differently than all other drivers in the state. Through the telephone interview procedure, data were obtained from 12 additional states. In addition, once called, 2 states returned the original questionnaires. These procedures allowed essential data to be obtained from 46 states. As of the publication date of this report, responses had not been received from Connecticut, Illinois, Indiana, and North Carolina.

Motorcyclists

A summary of the states' responses on the existence of special motorcycle licensing procedures and the availability of special motorcycle operator classes is given in Table 1. Although the states also furnished information on the existence of helmet, eye protection, and/or clothing laws, this information was supplemented by information available from the NHTSA (see Table 2).

Twenty-one states use special licensing or testing procedures when applicants apply for a motorcycle operator license. These procedures are generally of two types: requiring applicants to have completed an educational program and/or requiring them to pass a distinctive licensing examination. Thirteen states require motorcycle operator license applicants to take an educational course to prepare them for riding. In seven states (Delaware, Iowa, Maryland, Minnesota, Ohio, Texas, and Washington), a safety course is required of applicants under the age of 18; in two states (Florida and Maine), a safety course is required for those under the age of 21. A safety course is required of those under the age of 16 in North Dakota. California, Georgia, and Hawaii did not specify at what age the safety course requirement applied. In Pennsylvania, if applicants satisfactorily complete a safety course, the licensing test may be waived.

A motorcycle operator licensing examination is used by 7 states, with the Motorcycle Operators Skill Test (MOST) being used in Colorado, Nevada, New Hampshire, New Jersey, New Mexico, and Washington. Arizona requires a motorcycle skill test for applicants for a first license but did not indicate what test it used. In Nebraska, the road test is waived if the applicant completes a motorcycle operator safety course.

Table 1

Motorcyclists. Summary of State Responses: Programs in Existence

State	Special Licensing Provisions	Special Rider Safety Classes	Mandatory Helmet Law
Alabama			o
Alaska			o
Arizona	o	o	o
Arkansas			o
California	o	o	o
Colorado	o		
Connecticut*			
Delaware	o	o	o
Florida	o	o	o
Georgia	o	o	o
Hawaii	o	o	o
Idaho		o	o
Illinois*			
Indiana*			
Iowa	o		
Kansas		o	o
Kentucky			
Louisiana			o
Maine	o	o	o
Maryland	o	o	o
Massachusetts		o	o
Michigan		o	o
Minnesota	o	o	o
Mississippi			o
Missouri		o	o
Montana			o
Nebraska	o	o	o
Nevada	o		o
New Hampshire	o		o
New Jersey	o		o
New Mexico	o	o	o
New York			o

continues

Table 1 (continued)

State	Special Licensing Provisions	Special Rider Safety Classes	Mandatory Helmet Law
North Carolina*			
North Dakota	o	o	o
Ohio	o	o	o
Oklahoma			o
Oregon		o	o
Pennsylvania	o	o	o
Rhode Island		o	
South Carolina		o	o
South Dakota			o
Tennessee		o	o
Texas	o	o	o
Utah			o
Vermont		o	o
Virginia		o	o
Washington	o	o	o
West Virginia			o
Wisconsin		o	o
Wyoming		o	o

* No response received.

The states were also asked about the existence of special operator or safety courses that were not part of the licensing requirement. The Motorcycle Safety Foundation's (MSF) novice and experienced operator courses are available in 11 states (Arizona, Delaware, Florida, Georgia, Missouri, North Dakota, Texas, Vermont, Virginia, Washington, and Wisconsin). Eighteen other states either did not specify the name of the course or stated that they used courses developed by their state or by other vendors.

Forty-two states have a mandatory helmet law. In 21 states, all operators are required to use them, and in 16 states the helmet law applies only to those under 18. The other 5 states have a variety of special helmet use provisions: in South Carolina, use is required only for those under 21; in Alaska, the helmet law applies to drivers under 19 and to all passengers; in Tennessee, helmet use is based on the size of the motorcycle; and in Hawaii, helmets are required for passengers under 10. The helmet law in Maine applies to a variety of specific situations but generally is for drivers (and their passengers) during the first year of licensure. Delaware, Florida, Georgia, Michigan, Nevada, New Jersey, Vermont, Virginia, and Washington require eye protection in addition to helmet use. Maryland, Minnesota, and New Mexico, although not requiring helmets for those over 18, require eye protection. Colorado and Rhode Island require eye protection, but not helmet use. Finally,

Table 2

NHTSA Summary of Motorcycle Helmet Use Requirements (April 1990)

Require Use for All Riders	Age-Specific Use Requirement	Use Not Required
Alabama	Alaska	Colorado
Arkansas	Arizona	Illinois
District of Columbia	California[1]	Iowa
Florida	Connecticut[2]	Rhode Island[6]
Georgia	Delaware[3]	
Kentucky	Hawaii	
Louisiana	Idaho	
Massachusetts	Indiana	
Michigan	Kansas	
Mississippi	Maine[4]	
Missouri	Maryland	
Nebraska	Minnesota	
Nevada	Montana	
New Jersey	New Hampshire	
New York	New Mexico	
North Carolina	North Dakota	
Oregon	Ohio[5]	
Pennsylvania	Oklahoma	
Tennessee	South Carolina	
Texas	South Dakota	
Vermont	Utah	
Virginia	Wisconsin	
Washington	Wyoming	
West Virginia		
Puerto Rico		

[1]Required only under 15 1/2 years of age.
[2]Required only under 18 years of age.
[3]Riders under 19 must wear helmets, and helmets must be in the possession of other riders even though use is not required.
[4]Required only for persons under 15 years of age, novices, and holders of a learner's permit.
[5]First-year novices are also required to wear helmets.
[6]Passengers are required to wear helmets.

although Delaware riders over 18 are not required to wear a helmet, they must carry one when the vehicle is being operated.

Young Drivers

A summary of special or unique state programs and procedures for young drivers related to driver licensing, driver improvement, BAC level, and traffic or other offenses affecting the retention of a driver's license is shown in Table 3. All 46 states that furnished information have set age requirements for obtaining both a

permit allowing the applicant to learn to drive and a driver's license. In most states, a learner's permit can be obtained prior to age 16, and at ages 16 and above, the applicant can be licensed to drive. Alaska, Idaho, Montana, South Carolina, South Dakota, and Wyoming each issue a license to drive prior to age 15 based on a set of special circumstances. These criteria involve need, emergency situations, and/or distance from home to work or school.

Twenty-six states have special licensing provisions that apply to young new drivers that do not apply to other age categories of new drivers. Twenty states require young applicants to complete a course in driver education (see Table 4). Among the special provisions used by the other 6 states, Alaska issues a learner's permit to persons at age 14 with parental consent, Colorado has a special minor's driver's license for persons under 18, Florida has a daytime only restriction for learning to drive, Louisiana requires minors to show evidence of school enrollment, Maryland restricts persons under 18 from driving from midnight to 5 a.m., and West Virginia has a junior driver's license for persons aged 16 to 19. Pennsylvania, in addition to requiring driver education for applicants 17 and under, has a junior license for applicants aged 15 and 16 that prohibits them from driving between midnight and 5 a.m.

When asked about the use of provisional or probationary licenses for drivers under 21 years of age, 21 states stated that they had provisions of this nature. Eight based their restrictions on the age of the applicant. These states had five age-based criteria: all drivers under 18 (Montana, Ohio, Oklahoma, and Oregon), those 14 to 16 (Kansas), those 16 and 17 (Vermont), those 16 to 21 (Minnesota), and those 18 to 21 (Colorado). Other probationary provisions are for the first year of licensing (Rhode Island), the first 2 years of licensing (New Jersey), a juvenile restricted license (Wisconsin), and work/school restrictions (Idaho and Wyoming). In Maryland and Pennsylvania, persons under 18 are not permitted to drive between midnight and 5:00 a.m., and in South Carolina a special daytime only license is issued to drivers at age 15. Although Texas has special or provisional licensing, it did not state the conditions of this restriction.

The other 4 states base their license probation provisions on driver actions. In California, when drivers under the age of 18 commit two violations, they receive a 6-month license suspension. In South Dakota, for drivers between 14 and 16, the first violation results in a 30-day suspension and the second results in license suspension until age 16. In Utah, licensing action for young drivers occurs at the 70-point limit rather than at the 200-point limit used for other drivers. In West Virginia, if a driver under 18 commits two moving violations, the license is revoked until age 18.

One survey question asked whether the state had any special driver improvement programs for persons under 21 and under what conditions young drivers were enrolled. Only 5 states responded in the affirmative. In Arizona, although there are no state-sponsored or required programs, the local courts in several cities assign juveniles to the Defensive Driving Course (DDC) as part of the sentence for conviction of driving offenses. Florida requires all first-time applicants to take a 4-hour

Table 3

Young Drivers. Summary of State Responses: Programs in Existence

State	Special Licensing Provisions	Provisional Licenses	Driver Improvement	Lower BAC Used	Other Offenses
Alabama					
Alaska	o				o
Arizona			o		o
Arkansas					o
California	o	o			o
Colorado	o	o			
Connecticut*					
Delaware	o				o
Florida	o		o		
Georgia	o				
Hawaii	o				o
Idaho	o	o			o
Illinois*					
Indiana*					
Iowa	o				o
Kansas		o			
Kentucky					
Louisiana	o				
Maine	o			o	o
Maryland	o	o			o
Massachusetts	o				
Michigan			o		
Minnesota		o		o	
Mississippi					
Missouri					o
Montana	o	o			
Nebraska					
Nevada					
New Hampshire	o				
New Jersey		o	o		
New Mexico	o			o	o
New York	o				
North Carolina*					

continues

Table 3 (continued)

State	Special Licensing Provisions	Provisional Licenses	Driver Improvement	Lower BAC Used	Other Offenses
North Dakota	o				
Ohio	o	o			o
Oklahoma		o		o	
Oregon		o	o		
Pennsylvania	o	o			o
Rhode Island		o		o	o
South Carolina		o			
South Dakota		o			o
Tennessee	o				o
Texas	o	o			o
Utah		o			
Vermont	o	o			
Virginia	o				o
Washington					o
West Virginia	o	o			
Wisconsin	o	o		o	o
Wyoming		o			o

*No response received.

traffic law and substance abuse course prior to licensing. Although this requirement applies to all first-time applicants, it primarily affects beginning young drivers because the majority of persons over 18 have been previously licensed in another jurisdiction. In Michigan, young drivers who have two unsafe violations within the first 12 months of licensure are required to take a 90-minute traffic safety course that addresses four safe driving principles. New Jersey requires drivers on probationary status (the first 2 years of licensure) to attend a 4-hour safety course if they accumulate two convictions totaling 4 or more points. The same course is offered to other drivers who have accumulated 12 or more points, but they are not required to attend. In Oregon, both voluntary and mandatory programs of behavior modification exist for young drivers.

Information was also requested related to the use of a lower BAC limit for charging drivers under 21 with DUI and whether more severe penalties were imposed on these young drivers. Six states have provisions of this type. Drivers under 21 years of age in Maine receive a 1-year license suspension if convicted of having a BAC of 0.02% or above. In Minnesota, if drivers under 18 are convicted of DUI (0.10%), or of refusing to take the sobriety test, they lose their license until they are 18. In New Mexico, drivers under 18 can be charged with and convicted of DUI at a BAC of 0.05%. Oklahoma suspends the license of drivers under 18 until they reach 18 for a conviction of any alcohol use. In Rhode Island, young drivers

Table 4

States Requiring Driver Education

State	Age of Requirement
California	Under 18
Delaware	Under 18
Georgia	Under 16
Hawaii	N/S[1]
Idaho	Under 14
Iowa	Under 18
Maine	Under 17
Massachusetts	Under 16 1/2
Montana	Under 16
New Hampshire	Under 18
New Mexico	Under 16
New York	Under 18
North Dakota	Under 16
Ohio	Under 18
Pennsylvania	Under 18
Tennessee	Under 17
Texas	Under 18
Vermont	Under 18
Virginia	Under 18
Wisconsin	Under 18

[1] N/S = Not stated.

can be convicted of DUI with a BAC between 0.04% and 0.10%, and, if convicted, they lose their license for 6 months and must take an alcohol education class prior to being relicensed. In Wisconsin, drivers under 19 convicted of using any alcohol have their license suspended for 3 months.

Virginia is also interested in young driver licensing policies and actions of the other states for alcohol-related offenses other than DUI and for other offenses not involving alcohol use. Twenty-two states take driver's license action on the basis of the driver's age and the offense. Nearly all of these offenses involve the possession, purchase (including altering a driver's license), transport, or use of alcoholic beverages (see Table 5). Ten of the states use 18 as the criterion age, 3 use the term *minor* or *underage*, 1 uses age 19, 5 use age 21, and an age was not stated by 3 states. The license action varied from as little as a 20-day suspension of the driver's license to as much as loss of license until age 21. The loss of license for 90 days, 1 year, or until age 18 are the most common penalties invoked by the states.

Table 5

Offenses Affecting Licensing

State	Offense	Age	Action
Alaska	Alcohol possession	18	Loss of O/L[1]
Arizona	False ID to purchase	18	No O/L until 18
Arkansas	Drugs/alcohol	18	1-year loss of O/L
California	Same for all ages	18	More severe penalties
Delaware	Altering O/L	N/S[2]	Revoke/suspend
Hawaii	Alcohol use	21	N/S
Idaho	Alcohol possession	Under age	90-day/1-year suspension
Iowa	DUI	18	No O/L until 18
Maine	Illegal transport	Minor	20–60-day suspension
Maryland	Operate vehicle with 0.02% BAC	21	N/S
Missouri	Any alcohol use	21	Lose O/L
New Mexico	Possession	N/S	N/S
Ohio	Alcohol/delinquent	18	No O/L until 18
Pennsylvania	False ID/possession	21	O/L suspension
Rhode Island	Impaired driving	18	No O/L until 21
South Dakota	Possession	21	90-day suspension
Tennessee	Possession	N/S	O/L suspension
Texas	Moving violation	18	O/L suspension
Virginia	Alcohol/delinquent	18	O/L suspension
Washington	Any alcohol conviction	18	1-year revocation
Wisconsin	Possession/purchase	19	90-day suspension
Wyoming	Possession	Minor	90-day suspension

[1]O/L = Operator's license.
[2]N/S = Not stated.

Older Drivers

A summary of the responses received from the states that responded to the older driver questionnaire is given in Table 6. The questionnaire asked states about the existence of special licensing or renewal requirements, special driving courses, restricted licenses, voluntary surrender provisions, and the policy for reporting unsafe older drivers.

The data indicate that 36 states have no special licensing or renewal requirements for older drivers. The 10 states with special requirements generally require older drivers to have their vision examined more frequently than the rest of the driving population (see Table 7). In Alaska and Arizona, drivers 70 and over must renew their driver's license in person. Arizona drivers aged 60 to 69 may renew by mail if they include the results of a vision screening test. Maine requires a vision test for renewal applicants at the ages of 40, 52, and 65 and every 4 years for those over 65. Maryland requires applicants aged 70 and over applying for a new license either to show previous satisfactory operation of a motor vehicle or to present medical certification of their ability to operate a motor vehicle safely. New Mexico requires drivers 75 or over to renew their license annually at no charge, and Oregon requires drivers 50 or over to take a vision screening test once every 8 years or at every other license renewal. Every month, Pennsylvania randomly selects 1,500

Table 6

Older Drivers. Summary of State Responses: Programs in Existence

State	Special Licensing/ Renewal Requirements	Special Driving Classes	Restricted Licenses	Voluntary Surrender
Alabama				o
Alaska	o			
Arizona	o	o		
Arkansas		o		o
California		o	o	o
Colorado				o
Connecticut*				
Delaware		o		o
Florida		o		o
Georgia				o
Hawaii		o		o
Idaho		o		o
Illinois*				
Indiana*				
Iowa	o	o	o	
Kansas		o		
Kentucky				o
Louisiana				
Maine	o	o		
Maryland	o	o		
Massachusetts		o		o
Michigan			o	
Minnesota		o	o	o
Mississippi				o
Missouri				
Montana		o		o
Nebraska		o	o	
Nevada				o
New Hampshire	o			o
New Jersey		o		
New Mexico	o	o		o
New York		o		

continues

Table 6 (continued)

State	Special Licensing/ Renewal Requirements	Special Driving Classes	Restricted Licenses	Voluntary Surrender
North Carolina*				
North Dakota				o
Ohio		o		
Oklahoma		o		o
Oregon	o	o	o	
Pennsylvania	o			
Rhode Island	o	o		
South Carolina				o
South Dakota		o		
Tennessee				
Texas			o	o
Utah		o		
Vermont				
Virginia		o		o
Washington		o		o
West Virginia				o
Wisconsin		o		
Wyoming		o		

*No response received.

drivers who are 70 or over and requires them to pass a vision test and a physical examination in conjunction with their driver's license renewal. Iowa and Rhode Island issue a 2-year license to those over 70, and New Hampshire requires applicants over 75 to take a road test at each renewal.

Table 7

Special Licensing or Renewal Requirements for Older Drivers and the Applicable Age

State	Licensing Requirement	Age
Alaska	No renewal by mail	70+
Arizona	No renewal by mail	70+
Iowa	2-year license	70+
Maine	Vision screening test	40, 52, 65+
Maryland	Medical certification	70+
New Hampshire	Road test at renewal	75+
New Mexico	Annual renewals	75+
Oregon	Vision screening test	50+
Pennsylvania	Vision test and physical test renewal	70+
Rhode Island	2-year license	70+

Table 8

Automobile Insurance Premiums

State	Change in Rate
Arkansas	Discount available
California	Generally offered by insurance companies
Florida	Mandatory insurance discount
Idaho	Discount available
New Mexico	10% discount
New York	Discount available
Rhode Island	Discount available, must recertify every 2 years
Utah	Discount available
Virginia	Discount available
Washington	5% discount

Twenty-eight states have special driver improvement courses, defensive driving classes, or other programs for older drivers. The courses are conducted by various organizations, including the American Association of Retired Persons (AARP) in 20 states, the American Automobile Association (AAA) in 6 states, and the National Safety Council (NSC) in 5 states. Special classes for older persons are also taught by other groups, including state agencies. These courses are offered primarily on a voluntary basis, but in Oregon and Wyoming the course may also be mandatory for some older drivers. Ten of the states offering these courses indicated that insurance premium discounts are available for those who complete the course (see Table 8). In New York, successful completion of the course may also reduce the number of points on the applicant's driver history file.

Seven states issue restricted licenses for older drivers. Among the restrictions were limits on the time of day, the geographic area in which the vehicle may be operated, and the destination for driving and the use of certain equipment to be installed on the vehicle. Colorado, Maine, and Ohio issue restricted licenses to any driver, regardless of age, whose behavior warrants it.

Twenty-four states have a procedure for the voluntary surrender of a driver's license by older drivers who feel they have become unsafe. The most common procedure in these states is for the driver to return the license to the issuing agency along with a letter or signed affidavit stating the reason for the surrender. In additon, 11 states (Alaska, Arizona, Louisiana, Michigan, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Utah, and Wisconsin) noted that their surrender provisions are applicable to all drivers.

Forty-three states accept reports from various sources informing them of elderly or ill friends or relatives who have become unsafe drivers but who continue to drive. In most states, the appropriate agency with which to file a report is the state's licensing agency. Eight states accept reports from one or more of the following: law enforcement officers, licensing examiners, physicians, and relatives (see Table 9). In New Jersey, law enforcement officers may request a reexamination

only if there is a solid foundation for the request. If the Wyoming DMV acts on a report made by a family member, the family member's identity cannot be protected. Iowa permits any citizen to report an unsafe driver; however, anyone filing a report is informed that the alleged unsafe driver has the right to know who requested the reexamination.

After receiving a report, 13 of the states initiate investigations or interviews to determine the report's validity (see Table 10). In 25 states, the driver may be required to be reexamined on the written, vision, or road test. A medical report is required by 13 states when older drivers are reported for unsafe driving practices and the report is deemed to be valid. Arkansas requires persons to attend a hearing and show cause why their driver's license should not be suspended. Washington requires the reported person to take a special driving test.

Table 9

Accepted Reporting Sources for Unsafe Older Drivers

State	Law Enforcement Officers	License Examiners	Physicians	Family Members
Delaware			o	o
Georgia	o	o	o	o
Idaho	o		o	o
Kansas			o	
New Jersey	o			
Nevada				o
South Carolina	o		o	
Wyoming			o	o

Table 10

Review Process for Alleged Unsafe Older Drivers

State	Investigation	Interview	Reexamination	Medical Report
Alabama	o	o	o	
Alaska	o		o	
Arizona			o	
Arkansas	o			
California			o	
Colorado			o	o
Florida	o		o	o
Iowa			o	

continues

Table 10 (continued)

State	Investigation	Interview	Reexamination	Medical Report
Kentucky				o
Maine	o		o	o
Massachusetts			o	
Minnesota		o		
Mississippi			o	
Montana	o		o	
Nebraska			o	
Nevada			o	o
New York	o		o	o
Ohio	o		o	o
Oklahoma	o	o		
Oregon	o		o	
Pennsylvania			o	o
South Carolina			o	o
South Dakota			o	
Tennessee			o	o
Texas		o		
Utah			o	o
Vermont	o			
Virginia			o	o
West Virginia			o	o
Wisconsin			o	
Wyoming			o	

Medically Impaired Drivers

The questionnaire related to this issue requested information on the existence of medical advisory boards (MAB), the function of the boards, the reporting by physicians of persons with medical problems affecting driving, whether a medical examination was a prerequisite for licensing for certain groups of persons, and whether there had been any recent legislative or administrative actions on the issue of medically impaired drivers. A summary of the replies is shown in Table 11.

Thirty-five states have an MAB that establishes guidelines for the continued licensing of medically impaired persons (see Table 12). In some states, the MAB establishes medical criteria for the licensing of drivers. In some states, the MAB also reviews difficult or unique cases and makes recommendations to the licensing agency. In Montana and Mississippi, the MAB makes final decisions. In twelve states, decisions made by the MAB are subject to appeal. In Arizona, the MAB is responsible for establishing medical standards, but individual cases are reviewed by

Table 11

Medically Impaired. Summary of State Responses: Programs in Existence

State	Medical Exam for License or Renewal	New Requirements Enacted or Proposed	Medical Advisory Board	Physician Reporting
Alabama	o		o	o
Alaska	o			o
Arizona	o	o	o	o
Arkansas	o			
California	o		o	o
Colorado	o		o	
Connecticut*				
Delaware	o		o	o
Florida	o		o	o
Georgia	o		o	o
Hawaii			o	o
Idaho	o			o
Illinois*				
Indiana*				
Iowa	o		o	
Kansas	o		o	o
Kentucky	o		o	
Louisiana	o		o	o
Maine	o	o	o	o
Maryland	o	o	o	o
Massachusetts	o		o	o
Michigan	o		o	
Minnesota	o		o	
Mississippi	o		o	
Missouri			o	
Montana	o		o	o
Nebraska	o			o
Nevada	o			o
New Hampshire				
New Jersey	o		o	o
New Mexico	o		o	
New York			o	
North Carolina*				

continues

Table 11 (continued)

State	Medical Exam for License or Renewal	New Requirements Enacted or Proposed	Medical Advisory Board	Physician Reporting
North Dakota	o		o	o
Ohio	o			o
Oklahoma	o		o	o
Oregon	o	o		o
Pennsylvania	o		o	o
Rhode Island	o	o	o	o
South Carolina	o		o	o
South Dakota		o		
Tennessee	o	o	o	
Texas	o	o	o	
Utah	o	o	o	o
Vermont	o	o		
Virginia	o	o	o	o
Washington	o			
West Virginia	o		o	
Wisconsin	o		o	
Wyoming	o		o	o

*No response received.

the Arizona Medical Review Program (AMRP). Decisions made by the AMRP may be appealed through the licensing agency's hearing office. In 1989, New York enacted legislation creating an MAB for a 2-year period, and legislation to create a permanent MAB is pending.

Physician reporting is authorized or required in 17 states (see Table 13). In Delaware and New Jersey, physicians are required to report drivers who have experienced a blackout or seizure. Nevada requires physicians to report any patient who has experienced a loss of consciousness or is taking medication that would impair driving. Oregon requires physicians to report persons with disorders affecting consciousness. Physician reporting is voluntary in 11 states. In 9 states, physicians who file a report in good faith are protected by a statute that provides immunity from civil liability. Utah extends immunity to any person who files reports in good faith. In Georgia, the identity of physicians and family members who file a report is kept confidential.

Forty-one states responded that medical examinations are required for persons with particular conditions before they may obtain or renew their driver's license. The medical conditions that require examinations and the frequency of these examinations vary from state to state. Nine states require examinations for persons with any mental or physical condition that could affect their ability to operate a motor vehicle safely. Thirty-two states listed one or more conditions that may

Table 12
Medical Advisory Boards

State	Recommendations	Final Decisions	Advisory	Appeals Process	No Appeals Process	Not Answered
Alabama	o			o		
Arizona	o					
California						o
Colorado			o		o	
Delaware			o			
Florida	o			o		
Georgia						o
Hawaii			o			
Iowa	o				o	
Kansas						o
Kentucky	o			o		
Louisiana	o					
Maine	o				o	
Maryland	o			o		
Massachusetts	o		o			
Michigan	o		o		o	
Minnesota	o				o	
Mississippi		o			o	
Missouri						o
Montana		o		o		
New Jersey	o					
New Mexico	o				o	
New York			o			
North Dakota			o			
Oklahoma	o				o	
Pennsylvania	o				o	
Rhode Island	o			o		
South Carolina	o				o	
Tennessee	o			o		
Texas	o			o		
Utah	o			o		
Virginia	o			o		
West Virginia	o			o		
Wisconsin	o			o		
Wyoming	o					

Table 13

Physician Reporting of Medically Impaired Drivers

State	Authorized	Required	Voluntary	Liability Immunity
Alabama	o			
Alaska			o	
Arizona			o	o
California		o		
Delaware		o		o
Florida	o			
Georgia			o	o
Hawaii			o	
Idaho			o	o
Kansas			o	o
Louisiana			o	o
Maine	o			
Maryland	o			
Massachusetts			o	
Montana	o			
Nebraska			o	
Nevada		o		
New Jersey		o		
North Dakota			o	o
Ohio	o			
Oklahoma	o			
Oregon		o		
Pennsylvania		o		
Rhode Island	o			
South Carolina	o			
Utah	o			o
Virginia	o			
Wyoming			o	o

require a person to submit to a medical examination before a license can be issued or renewed. The medical conditions most often listed were epilepsy and any condition that causes seizures, conditions that cause a loss of consciousness, diabetes, vision problems, drug and alcohol addiction, and cardiac conditions (see Table 14).

Two states have special testing procedures for the hearing impaired. In North Dakota, the state requires the licensing agency to provide interpreters for

Table 14

Medical Conditions Most Often Cited by States
as Necessitating Medical Examinations or Periodic Reviews

Medical Condition	Number of States
Epilepsy and seizures	20
Diabetes	12
Loss of consciousness	12
Cardiac conditions	10
Vision problems	3
Alcohol and drug addiction	2
Any condition that may impair driving	9

hearing-impaired applicants. Ohio provides hearing-impaired applicants with three testing options: taking a written test, using an interpreter, or taking a videotaped examination.

Eleven states have recently enacted, proposed, or considered new examinations, license restrictions, or other regulations affecting medically impaired persons. In 1987, Arizona added administrative regulations that established standards for vision and neurological episodes, including epilepsy. Maine introduced the Functional Abilities Profile (FAP) in an attempt to provide physicians with uniform guidelines for dealing with medically impaired persons. In addition to the Driver Improvement Profiles that make up FAP, nonliability legislation was drafted to reduce physicians' concerns about reporting, liability, and breach of confidentiality. The reporting system used with FAP calls for physicians to choose the correct diagnostic category, check off the appropriate boxes on a form, and return the form to the Motor Vehicle Division. This procedure shifts the responsibility from the physician to the Motor Vehicle Division for deciding whether the person may drive.

Maryland has proposed new procedures for persons who have seizures or lapses of consciousness, but the nature of the procedures could not be determined. In 1990, South Dakota repealed the law that required persons with diabetes to provide a physician's statement before receiving a driver's license. Tennessee and Virginia now provide for the testing of bioptic lens wearers. Texas no longer requires those with musculoskeletal disorders to go before its MAB, and these persons now need only pass a driving examination demonstrating their driving ability to obtain a driver's license. Applicants who have successfully completed an alcohol and drug rehabilitation program may submit a letter from a physician or a hospital instead of going before the Texas MAB. In Vermont, persons with insulin-dependent diabetes may now obtain a school bus operator's license.

Substance Abusers

States were requested to furnish information on procedures for identifying non-DUI substance abusers, special licensing or renewal requirements for these

drivers, the use of restricted licensing, and the use of special safety education classes. A summary of the responses is given in Table 15.

Fifteen states have a procedure for identifying substance-abusing drivers caught for offenses other than DUI. Nine states permit physicians, treatment centers, or others to report substance-abusing drivers (see Table 16). Three states require physicians to file a report. California requires physicians and social workers to report persons with medical problems and treats substance abuse as a medical problem, not a social one. Oregon requires a physician to report any alcoholic person who has had a loss of consciousness. Pennsylvania requires physicians and others who treat substance abusers to file a report. A Georgia law that went into effect on July 1, 1990, requires drug offenders to have their offense reported to the DMV. After the first drug offense, the driver is assigned to a 16-hour course in drug and alcohol awareness. After the second offense, the offender must take a 24-hour intensive intervention course. Maryland also requires drug offenses to be reported to the licensing agency. In Maryland, the Motor Vehicle Administration is required to suspend the license of anyone convicted of violations relating to the possession, use, or abuse of controlled or dangerous substances. Florida has a statute that permits physicians, agency personnel, and other persons to report persons with substance-abuse problems to the motor vehicle agency. Louisiana has a procedure for identifying this group of drivers but did not specify that procedure.

Twelve states have special licensing or renewal requirements for substance-abusing drivers who have been identified through means other than a conviction for DUI. A summary of these requirements is given in Table 17. Four states require periodic medical reports, and 3 states require participation in a treatment program. California refers drivers to a driver safety referee to determine if periodic drug testing is necessary. In Florida, applicants or licensees who admit to a history of alcohol or drug abuse must document successful involvement in a treatment program and that they have remained drug free. Persons who are reported to the agency by a third party must document that they have successfully completed a treatment program and have been alcohol and drug free for at least 6 months. Oregon places drivers in a medical certification program and requires them to obtain annual medical clearances until they have been abstinent for 3 years. Pennsylvania may require a medical examination of any non-DUI substance abuser who has come to the attention of the licensing agency. In Wyoming, a court may order a driver to complete a driver improvement course.

Nine states use restricted licenses to control substance-abusing drivers who have been identified through means other than a conviction for DUI. Kansas issues restricted licenses only in the case of a court order. Louisiana does not generally issue restricted licenses, but they will do so on medical advice. Maine and Texas issue restricted licenses requiring abstinence. Massachusetts and Missouri issue licenses that restrict the hours when substance abusers who have been convicted of certain offenses may drive. In Missouri, the driver must also be employed to qualify for a hardship license. Montana's restricted license for substance abusers is the same as that for those convicted of DUI. Utah reported issuing a restricted license, but no further information was provided. Wyoming may require a driver to file a

Table 15

Substance Abusers. Summary of State Responses: Programs in Existence

State	Procedure for Identifying Substance Abusers	Special Licensing/ Renewal Requirements	Restricted Licenses
Alabama	o	o	
Alaska		o	
Arizona	o		
Arkansas			
California	o	o	
Colorado			
Connecticut*			
Delaware			
Florida	o	o	
Georgia	o		
Hawaii			
Idaho			
Illinois*			
Indiana*			
Iowa			
Kansas			o
Kentucky			
Louisiana	o		o
Maine	o	o	o
Maryland	o		
Massachusetts			o
Michigan			
Minnesota			
Mississippi			
Missouri			o
Montana			o
Nebraska			
Nevada			
New Hampshire			
New Jersey			
New Mexico			
New York			
North Carolina*			

continues

Table 15 (continued)

State	Procedure for Identifying Substance Abusers	Special Licensing/ Renewal Requirements	Restricted Licenses
North Dakota			
Ohio			
Oklahoma			
Oregon	o	o	
Pennsylvania	o	o	
Rhode Island			
South Carolina			
South Dakota			
Tennessee			
Texas	o	o	o
Utah	o	o	o
Vermont	o		
Virginia	o	o	
Washington	o	o	
West Virginia			
Wisconsin			
Wyoming		o	o

*No response received.

Table 16

Identification Procedures for Substance Abusers

State	Procedures
Alabama	Physicians and treatment centers may report
Arizona	Physicians and others may report
California	Physicians and social workers required to report
Florida	Physicians and others may report
Georgia	Drug offenses reported to the licensing agency
Louisiana	Not indicated
Maine	Anyone may report
Maryland	Drug offenses reported to the licensing agency
Oregon	Physicians are required to report
Pennsylvania	Physicians and others are required to report
Texas	Physicians may report
Utah	Physicians may report
Vermont	Physicians may report
Virginia	Physicians may report
Washington	Physicians, treatment centers, or family may report

Table 17

Special Licensing/Renewal Requirements

State	Requirement	Period
Alabama	Periodic medical reports	N/S[1]
Alaska	Periodic medical reports	N/S
California	Referred to "driver safety referee"/ periodic drug testing	N/S
Florida	Complete treatment program and abstinence	If reported by 3rd party, 6 months
Maine	Periodic medical exams	4 years
Oregon	Medical certification program and abstinence	3 years
Pennsylvania	Possible medical exam	N/S
Texas	Substance abuse program	N/S
Utah	Driving privileges monitored or restricted	N/S
Virginia	Periodic medical reports	N/S
Washington	Reports from treatment center	Quarterly
Wyoming	Court-ordered driver improvement course	N/S

[1]N/S = Not stated.

Current Alcohol Report every 90 days; these reports are used to report alcohol and other drug use.

States were also asked about the existence of any special state-sanctioned remedial classes for substance-abusing drivers, exclusive of programs for those convicted of DUI. No state reported having such a program.

Non–English-Speaking and Illiterate Drivers

A summary of state responses related to special testing provisions, use of foreign language tests, oral licensing examinations, and use of interpreters is given in Table 18. The available data indicate that the majority of states are making an effort to accommodate the special needs of non–English-speaking or illiterate persons. This effort is focused almost exclusively on testing. Forty-one states use special testing procedures for non–English-speaking or illiterate persons. These testing procedures fall into three categories: native language examinations, oral examinations, and the use of interpreters.

Twenty-seven states give examinations in at least one language other than English (see Table 19). Twenty-four states give examinations in Spanish, 13 in Vietnamese, 11 in Korean, and 7 in Chinese. Fifteen states give examinations in other native languages. California, Delaware, and Rhode Island did not specify the languages in which their examinations are available. Four states (Iowa, Maryland, Minnesota, and Washington) noted the availability of study guides or manuals in various languages. In addition to, or instead of, native language examinations, Utah and Wisconsin use picture examinations for non–English-speaking and illiterate persons. Hawaii, which at one time gave native language examinations to a

Table 18

Non–English-Speaking and Illiterate Drivers.
Summary of State Responses: Programs in Existence

State	Special Testing Provisions	Foreign Language Testing	Oral Exams	Interpreters Permitted
Alabama	o	o		
Alaska	o		o	o
Arizona	o	o	o	
Arkansas	o	o	o	
California	o	o	o	o
Colorado				
Connecticut*				
Delaware	o	o	o	o
Florida	o		o	o
Georgia	o	o	o	o
Hawaii	o		o	o
Idaho	o	o		o
Illinois*				
Indiana*				
Iowa	o	o	o	
Kansas	o		o	o
Kentucky	o	o	o	
Louisiana	o	o	o	o
Maine				
Maryland	o	o		o
Massachusetts	o	o	o	
Michigan	o	o	o	o
Minnesota	o	o	o	
Mississippi	o		o	
Missouri	o		o	o
Montana	o	o	o	
Nebraska	o	o		
Nevada	o	o	o	
New Hampshire	o		o	o
New Jersey	o	o	o	o
New Mexico	o	o	o	
New York				

continues

Table 18 (continued)

State	Special Testing Provisions	Foreign Language Testing	Oral Exams	Interpreters Permitted
North Carolina*				
North Dakota	o		o	
Ohio	o	o	o	
Oklahoma				
Oregon	o	o	o	
Pennsylvania				
Rhode Island	o	o		
South Carolina	o	o	o	
South Dakota	o		o	
Tennessee	o		o	
Texas	o	o	o	
Utah	o			
Vermont	o		o	o
Virginia	o	o	o	o
Washington	o	o	o	o
West Virginia	o		o	
Wisconsin	o	o	o	
Wyoming	o		o	o

*No response received.

Table 19

Native Language Examinations

State	Spanish	Vietnamese	Korean	Chinese	Other
Alabama	o	o	o	o	12
Arizona	o	o	o	o	
Arkansas	o				
California					19
Delaware					N/S[1]
Georgia	o	o	o	o	3
Idaho	o				
Iowa	o	o	o		1
Kentucky	o				1
Louisiana	o				
Maryland	o				
Massachusetts	o	o	o	o	19

continues

Table 19 (continued)

State	Spanish	Vietnamese	Korean	Chinese	Other
Michigan	o	o	o	o	15
Minnesota	o				1
Montana	o				
Nebraska	o				
Nevada	o	o	o		1
New Jersey	o	o	o		11
New Mexico	o				
Ohio	o	o			7
Oregon	o		o		1
Rhode Island					N/S[1]
South Carolina	o	o			5
Texas	o				
Virginia	o	o			
Washington	o	o	o	o	2
Wisconsin	o	o	o	o	6

[1]N/S = Not stated.

number of different groups, now requires all applicants to take an English language written examination. Any applicant who fails this examination twice may take an oral examination.

Thirty-five states administer oral examinations. Six states (California, Georgia, Montana, Nevada, Ohio, and Tennessee) use examinations recorded on audiotapes or videotapes, and Nebraska has Spanish-speaking license examiners who administer oral examinations.

Eighteen states permit the use of interpreters by non–English-speaking applicants. Delaware and Wyoming provide interpreters, but the remaining states require the applicants to provide their own. Maryland requires interpreters to be court approved. In Georgia, Hawaii, and New Jersey, interpreters are used as a last resort.

DISCUSSION

Several things are clear from this study:

1. There are no universally accepted categories of at-risk drivers. Even the definitions of *young* or *older* driver vary from state to state and in the research literature.
2. There are no universally accepted parameters or measures to identify at-risk drivers.

3. There are no universally accepted means by which motor vehicle administrators issue, restrict, or deny a driver's license to at-risk drivers.

4. Knowledge of and the methods for dealing with at-risk drivers are in the fledgling stage of development.

5. Virginia has the opportunity to take a leading role in defining and developing the field pertaining to at-risk drivers.

Because the science, laws, and practices involving at-risk drivers are not fully developed, there are no definitive solutions that this study can provide to Virginia's motor vehicle administrators. However, some issues and programs warrant further investigation and evaluation. Additional studies focused on the issues brought to the forefront may provide Virginia's motor vehicle administrators with the ability to take a leading role in developing state-of-the-art programs for at-risk drivers.

The researchers have determined the following to be the most important findings of this study:

1. *Motorcyclists.* Because Virginia has laws mandating the use of helmets and eye protection, and because motorcycle operators must pass a special examination, it can be concluded that Virginia is doing as much as or more than other states in reducing the hazards associated with motorcycle riding.

2. *Young drivers.* Provisional licensing has shown some promise with young drivers. Provisions involving limits on traffic-related convictions and driving curfews have had some success in reducing the crash and conviction rates of young drivers. Some states have a provision that establishes a BAC limit lower than 0.10% for young drivers, but this type of program is relatively new and yet to be fully evaluated.

3. *Older drivers.* Research indicates that testing for static visual acuity under well-lighted conditions, the test used in all 50 states, may not be an adequate measure of the visual requirements essential to safe driving. Dynamic visual acuity, or the ability to perceive moving objects, appears to be more closely related to the driving task. No test for dynamic visual acuity that is both quick and accurate was identified by this study. One consistent finding was that the elderly tend to impose driving restrictions on themselves. These self-imposed restrictions include driving only during daylight hours and limiting the use of highways with large traffic volumes. In addition, older drivers with driving problems are not likely to recognize these problems and, therefore, do not limit their driving any more than other older drivers.

4. *Medically impaired drivers.* Since there are numerous conditions that may affect driving in various ways, and since these conditions may affect persons to varying degrees, it may be necessary to look at cases on an individual basis to ensure that unsafe, medically impaired drivers are re-

moved from the roadways and that those who have a minor medical impairment but are able to drive safely can retain their driving privileges. Involving physicians is one means of improving screening for medically impaired drivers and determining their ability to drive safely. Six states require and 11 other states authorize physicians to report persons with specified medical conditions. Virginia authorizes physicians to report patients with any medical impairments that could affect safe driving. Further, to facilitate physician reporting, 9 states provide immunity from civil liability to physicians who file a report. Permitting or requiring physicians to report makes it possible for motor vehicle administrators to identify persons potentially at risk because of medical impairments.

5. *Substance abusers.* There is no procedure in Virginia to identify substance abusers other than those who have been convicted of DUI; however, 15 states have such procedures in place. Nine states allow physicians to report the names of substance abusers to the state's licensing agency; 3 require physicians to report the names of substance abusers to their licensing agency; and 2 require that the licensing agency be informed of persons who receive drug-related criminal convictions. The other state gave no information on its procedure. Even if no restrictions are placed on the driver's license of non-DUI substance abusers, a reporting system provides a means by which this group of at-risk drivers may be identified and monitored by motor vehicle administrators.

6. *Non–English-speaking and illiterate drivers.* Most states try to accommodate the special needs of these drivers by offering native language examinations and oral examinations and permitting the use of interpreters. Virginia uses all three methods. The state of the art regarding non–English-speaking and illiterate drivers involves accommodating for their lack of English reading ability.

RECOMMENDATIONS

Motorcyclists

Since this study has shown that Virginia is doing as much as or more than other states in reducing the hazards associated with motorcycle riding, no additional measures are recommended at this time.

Young Drivers

Two approaches may be useful in mitigating the crash and conviction problems of young drivers. The first is the use of provisional licensing programs. Among the provisions being used are establishing a low limit on the number of convictions before a driver's license is suspended or revoked; prohibiting driving at night; prohibiting alcohol use, purchase, or possession; and establishing a lower BAC level as evidence of drunken driving. A multiyear study would be necessary to determine the effectiveness of a provisional licensing program in Virginia. Enabling legislation would also be required so that such a study could be conducted. If provisional licensing is found to be an effective means of dealing with young drivers, sample legislation would have to be drafted to implement such a procedure on a statewide basis.

Requiring a second driver's education course is another approach. This second course would focus on teaching young drivers emergency maneuvers to increase their driving knowledge and skills. Before establishing such a course in Virginia, a feasibility study is needed to determine if the course would be an effective and efficient use of resources.

Older Drivers

There are two methods that warrant further investigation: (1) testing for dynamic visual acuity, and (2) restricted and provisional licensing. Before either method is examined, the age at which a driver becomes an older driver must be defined.

Virginia presently tests the vision of all drivers at every license renewal, but the test of static visual acuity that is being administered may not be a good measure of the types of vision that are essential to safe driving. A test of static visual acuity under varying lighting conditions may aid in identifying elderly drivers with vision problems. Further, since dynamic visual acuity is more closely related to the driving task, research should be carried out to determine if a test of dynamic visual acuity exists that could be adapted for use in the licensing and renewal process.

Restricted licensing is a promising method for dealing with older drivers experiencing difficulties with driving tasks. Possible restrictions include prohibiting driving at night, prohibiting driving during peak hours, and restricting the geographic area where driving is permitted. A second type of licensing action would involve performance-based provisions. Such provisions would establish a limit on the number of crashes and convictions before a driver's license is suspended or revoked. Such provisions may reduce the number of unsafe drivers operating motor vehicles while placing no additional burdens on older drivers with good driving records. Enabling legislation would be necessary for a study to determine if any of these provisions would be effective in Virginia.

Medically Impaired and Substance-Abusing Drivers

These drivers pose an identification problem for motor vehicle administrators. Several actions should be analyzed to determine the effectiveness in identifying these drivers. A survey of physicians should be conducted to determine if requiring physicians to report unsafe conditions would be an efficient and effective means of identifying these drivers. It should also be determined if there are other reporting sources (e.g., social workers and treatment centers) who should also be required to report. If research indicates that required reporting would be an effective identification process, sample legislation would have to be drafted. Enacting legislation to provide physicians (and possibly others) who file a report immunity from civil liability arising from such reporting should be considered.

The court system could also be used in identifying substance-abusing drivers. This could be accomplished by enacting legislation that would require that specified drug-related convictions be reported to the DMV. A survey of the judiciary would need to be conducted to determine the potential level of compliance.

Non–English-Speaking and Illiterate Drivers

The state of the art in dealing with non–English-speaking and illiterate drivers involves making accommodations for their lack of English reading ability. This is usually accomplished by using special testing procedures and providing study manuals in various languages. Virginia presently administers its written driving examination in English, Spanish, and Vietnamese; however, the driving manual is available only in English. To expand the applicant's driving knowledge, it may be appropriate for manuals to be available in an audio format and in the same languages as the examinations. Periodic reviews of population changes should be done to determine if driving examinations and manuals need to be made available in additional languages. Finally, it is recommended that the DMV initiate a study of persons with specific language difficulties to determine whether these deficiencies are reflected in their crash and conviction records.

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APPENDIX A

Mail-Out Questionnaires

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OSCAR K. MABRY
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COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
TRANSPORTATION RESEARCH COUNCIL
BOX 3817 UNIVERSITY STATION
CHARLOTTESVILLE, 22903

IN REPLY PLEASE
REFER TO FILE NO

RAY D. PETHTEL
COMMISSIONER

AT-RISK DRIVER QUESTIONNAIRE:

MOTORCYCLISTS

INSTRUCTIONS. This questionnaire is part of a 50-state survey being conducted by the Virginia Transportation Research Council's Safety Group. It is designed to capture information on the activities that are going on in state motor vehicle agencies to address certain groups of drivers that are considered to be at a higher-than-average risk of crash involvement or conviction for violation of traffic laws. This survey is one of six surveys that are being completed by officials in your agency.

Please take a few minutes to complete the survey. It is fairly straightforward and easy to comprehend. If you feel that copies of policy, state law, etc., would help to answer the questions, please feel free to attach them. Also, feel free to use additional paper as needed. When finished with the questionnaire, please return it to the co-worker from whom it was received so that he/she can collect all six of the surveys and return them to me by March 30. Should you have any questions, please feel free to call me at (804) 293-1919 between the hours of 8:30 a.m. and 4:00 p.m. EDT.

Thank you in advance for your willingness to assist in this effort. Once I have received and analyzed the results from all the states, I shall send your agency a copy of the final report.

Michael E. Worthington
Research Scientist

****

1. Does your state have special licensing, testing or renewal provisions for motorcyclists?

   ( ) No
   ( ) Yes (Please describe) _____

   _____

   _____

   _____

   _____

2. Does your state have special accident prevention or rider improvement classes for motorcyclists?

   ( ) No (Skip to Question #4)
   ( ) Yes--Are they (check one): Mandatory? ____ Voluntary? ____
   (If voluntary, briefly describe the incentives for rider participation) _____

3. How many motorcyclists attended such classes last year? _____
   What percentage of your state's motorcyclists does this number represent? _____

4. Does your state have a mandatory helmet use law or other law(s) requiring that protective clothing or gear be worn or used?

   ( ) No
   ( ) Yes (Briefly describe) _____

5. Have any studies been done of the effects of classes or other provisions on accident rates among motorcyclists in your state?

   ( ) No
   ( ) Yes (Briefly summarize the findings) _____

6. Have any studies been done of the effects of mandatory helmet use or similar laws in your state?

   ( ) No
   ( ) Yes (Briefly summarize the findings) _____

   _____

   _____

   _____

   _____

7. What other measures, if any, are used in your state to encourage motorcycle safety? _____

   _____

   _____

   _____

   _____

8. Please feel free to make any additional comments about the handling of motorcyclists in your state? _____

   _____

   _____

   _____

   _____

Thank you for your assistance. Please complete the information below and return the survey to the co-worker who asked you to complete it.

Your Name (please print) _____

Your Title _____

Your Phone No. ( ) _____

Your Mailing Address _____

_____

_____

DEPARTMENT OF TRANSPORTATION
RAY D PETHTEL, COMMISSIONER
OSCAR K. MABRY
DEPUTY COMMISSIONER
GARY R ALLEN, PH. D.
RESEARCH DIRECTOR

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UNIVERSITY OF VIRGINIA
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BOX 3817 UNIVERSITY STATION
CHARLOTTESVILLE, 22903

IN REPLY PLEASE
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AT-RISK DRIVER QUESTIONNAIRE:

YOUNGER DRIVERS

INSTRUCTIONS. This questionnaire is part of a 50-state survey being conducted by the Virginia Transportation Research Council's Safety Group. It is designed to capture information on the activities that are going on in state motor vehicle agencies to address certain groups of drivers that are considered to be at a higher-than-average risk of crash involvement or conviction for violation of traffic laws. This survey is one of six surveys that are being completed by officials in your agency.

Please take a few minutes to complete the survey. It is fairly straightforward and easy to comprehend. If you feel that copies of policy, state law, etc., would help to answer the questions, please feel free to attach them. Also, feel free to use additional paper as needed. When finished with the questionnaire, please return it to the co-worker from whom it was received so that he/she can collect all six of the surveys and return them to me by March 30. Should you have any questions, please feel free to call me at (804) 293-1919 between the hours of 8:30 a.m. and 4:00 p.m. EDT.

Thank you in advance for your willingness to assist in this effort. Once I have received and analyzed the results from all the states, I shall send your agency a copy of the final report.

Michael E. Worthington
Research Scientist

****

1. Does your state have special licensing procedures for drivers who are under a certain age?

   ( ) No
   ( ) Yes (Briefly describe the procedures and the age(s) to which they are applicable) _____

_____

_____

_____

_____

2. Have any studies been conducted in your state on the incidence of accidents and/or violations among younger drivers?

   ( ) No
   ( ) Yes (Briefly summarize the findings) _____

   _____

   _____

   _____

   _____

3. Have any studies been conducted in your state on the effectiveness of special licensing procedures, restrictions, or other special treatment programs for younger drivers?

   ( ) No
   ( ) Yes (Briefly summarize the findings) _____

   _____

   _____

   _____

   _____

4. Are younger drivers in your state issued probationary or provisional licenses?

   ( ) No
   ( ) Yes (Briefly describe the conditions and the age group(s) to which they apply) _____

   _____

   _____

   _____

   _____

5. A. Does your state use a point system for driver improvement?

   ( ) No (Skip to Question #6)
   ( ) Yes

B. Are younger drivers subject to remedial action (e.g., warning letters, group interviews, etc.) at a lower level of points than other drivers?

( ) No
( ) Yes (Briefly describe your state's statutes and regulations) _____

_____

_____

_____

_____

_____

C. Does your state have a separate point system for younger drivers?

( ) No
( ) Yes (Briefly explain) _____

_____

_____

_____

_____

6. Does your state have special driver improvement classes for younger drivers?

( ) No
( ) Yes--Are they (check one): Mandatory? ____ Voluntary? ____
If voluntary, what incentives are used to encourage participation?

_____

_____

_____

_____

_____

7. A. Does your state use different Blood Alcohol Content (BAC) levels when charging younger drivers with driving under the influence?

( ) No
( ) Yes (Please list BAC level(s) and age group(s)

_____

_____

_____

_____

_____

B. Are there other special alcohol-related offenses in your state for younger drivers only?

( ) No
( ) Yes (Briefly describe) _____

_____

_____

_____

_____

C. Are there any other offenses or violations which apply exclusively to younger drivers?

( ) No
( ) Yes (Briefly describe) _____

_____

_____

_____

_____

8. May parents demand that their child's driver's license be revoked?

( ) No
( ) Yes--How many times did this occur last year? _____
What percentage of younger drivers does this number represent? _____

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9. Please feel free to make any additional comments about the handling of younger drivers in your state. _____

_____

_____

_____

_____

Thank you for your assistance. Please complete the information below and return the survey to the co-worker who asked you to complete it.

Your Name (please print) _____

Your Title _____

Your Phone No. ( ) _____

Your Mailing Address _____

_____

_____

DEPARTMENT OF TRANSPORTATION
RAY D PETHTEL, COMMISSIONER

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RESEARCH DIRECTOR

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DEPARTMENT OF CIVIL ENGINEERING
FURMAN W BARTON, CHAIRMAN

1443

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
TRANSPORTATION RESEARCH COUNCIL
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CHARLOTTESVILLE, 22903

RAY D. PETHTEL
COMMISSIONER

IN REPLY PLEASE
REFER TO FILE NO

AT-RISK DRIVER QUESTIONNAIRE:

OLDER DRIVERS

INSTRUCTIONS. This questionnaire is part of a 50-state survey being conducted by the Virginia Transportation Research Council's Safety Group. It is designed to capture information on the activities that are going on in state motor vehicle agencies to address certain groups of drivers that are considered to be at a higher-than-average risk of crash involvement or conviction for violation of traffic laws. This survey is one of six surveys that are being completed by officials in your agency.

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Thank you in advance for your willingness to assist in this effort. Once I have received and analyzed the results from all the states, I shall send your agency a copy of the final report.

Michael E. Worthington
Research Scientist

****

1. Does your state have special licensing or renewal requirements for older drivers?

   ( ) No (Skip to Question #4)
   ( ) Yes

2. At what age does each of the special licensing or renewal requirements for older drivers apply? _____

_____

_____

_____

_____

3. Briefly describe each of the requirements. _____

4. Does your state have special driver improvement, defensive driving classes, or other programs for older drivers?

   ( ) No (Skip to Question #9)
   ( ) Yes

5. Briefly describe these special driver improvement, defensive driving classes, or other programs. Include the age group(s) that attend(s), and whether attendance is mandatory or voluntary:

6. Who conducts these programs? (check as many as apply)

   ( ) Driver improvement employees
   ( ) Private firms under contract
   ( ) Other (specify) _____

7. A. How many licensed older drivers were in your state last year? _____

   B. How many older drivers participated in each type of driver improvement, defensive driving class, or other programs last year?

PROGRAM	# ATTENDED

8. Have any studies been done on the effectiveness of your state's driver improvement/defensive driving classes for older drivers?

   ( ) No
   ( ) Yes (Briefly summarize the findings) _____

9. A. Does your state issue restricted licenses for older drivers?

   ( ) No (Skip to Question #10)
   ( ) Yes (Briefly explain the conditions that apply _____

B. How many restrictive licenses were issued last year to older drivers in your state? _____

10. Is there a procedure for voluntary surrender of a driver's license by older drivers who feel they have become unsafe?

( ) No
( ) Yes (Briefly explain the procedure)_ _____

_____

_____

_____

_____

11. A. To what person or agency may citizens in your state report elderly or ill friends or relatives who have become unsafe drivers but who continue to drive? _____

B. How many such reports were received in your state last year? _____

C. What action is taken when such reports are received? _____

_____

_____

_____

_____

12. A. Have any studies been done in your state regarding the incidence of accidents among older drivers?

( ) No
( ) Yes (Briefly summarize the findings) _____

_____

_____

_____

_____

B. Have any studies been done in your state regarding the prevention of accidents involving older drivers?

( ) No
( ) Yes (Briefly summarize the findings) _____

_____

_____

_____

_____

13. Have any special programs or public education campaigns that address the needs and problems of older drivers been recently conducted in your state? Are any planned? _____

( ) No
( ) Yes (Briefly describe) _____

_____

_____

_____

_____

14. Please feel free to make any additional comments about the handling of older drivers in your state? _____

_____

_____

_____

_____

Thank you for your assistance. Please complete the information below and return the survey to the co-worker who asked you to complete it.

Your Name (please print) _____

Your Title _____

Your Phone No. ( ) _____

Your Mailing Address _____

_____

_____

DEPARTMENT OF TRANSPORTATION
RAY D PETHTEL, COMMISSIONER
OSCAR K. MABRY
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COMMONWEALTH of VIRGINIA

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CHARLOTTESVILLE, 22903

IN REPLY PLEASE
REFER TO FILE NO

AT-RISK DRIVER QUESTIONNAIRE:

MEDICALLY-IMPAIRED

INSTRUCTIONS. This questionnaire is part of a 50-state survey being conducted by the Virginia Transportation Research Council's Safety Group. It is designed to capture information on the activities that are going on in state motor vehicle agencies to address certain groups of drivers that are considered to be at a higher-than-average risk of crash involvement or conviction for violation of traffic laws. This survey is one of six surveys that are being completed by officials in your agency.

Please take a few minutes to complete the survey. It is fairly straightforward and easy to comprehend. If you feel that copies of policy, state law, etc., would help to answer the questions, please feel free to attach them. Also, feel free to use additional paper as needed. When finished with the questionnaire, please return it to the co-worker from whom it was received so that he/she can collect all six of the surveys and return them to me by March 30. Should you have any questions, please feel free to call me at (804) 293-1919 between the hours of 8:30 a.m. and 4:00 p.m. EDT.

Thank you in advance for your willingness to assist in this effort. Once I have received and analyzed the results from all the states, I shall send your agency a copy of the final report.

Michael E. Worthington
Research Scientist

****

1. Are medical examinations required for some groups of drivers before they may obtain or renew their driver's licenses?

   ( ) No
   ( ) Yes (List the applicable medical conditions and how often examinations are required)

CONDITION	HOW OFTEN
_____	_____
_____	_____
_____	_____

2. A. Have any new driving examinations, medical examinations, license restrictions, or other regulations affecting the medically-impaired been recently enacted, proposed, or considered in your state?

( ) No (Skip to Question #3)
( ) Yes (Please describe) _____

_____

_____

_____

_____

B. Who sponsored these changes? (For example, legislators, citizen groups, private interest groups, etc.) _____

_____

_____

_____

_____

C. How were these changes made? (Check as many as apply)

( ) Legislative process
( ) Executive order
( ) Internal policy change
( ) Administrative regulations change
( ) Other (specify) _____

_____

_____

D. What event(s) prompted these changes? _____

_____

_____

_____

_____

E. What general strategy or rationale was used by the sponsoring group to promote these changes? _____

_____

_____

_____

_____

3. A. Does your state have a Medical Advisory Board?

( ) No (Skip to Question #4)
( ) Yes--under what state agency does it operate? _____

B. To whom do Board members report? _____

C. Briefly summarize the duties, powers, and limitations of the Board

_____

_____

_____

_____

_____

D. Are Board decisions (check one):

( ) Final?
( ) Recommendations?--To whom are they made? _____

E. Is there an appeal procedure for Board actions?

( ) No
( ) Yes (Briefly describe how it works) _____

_____

_____

_____

_____

4. Are physicians required or authorized to report the names of patients with certain medical conditions?

( ) No
( ) Yes (Please complete the rest of this question)

TYPE OF PATIENT	REPORTED TO	(CHECK ONE) REQUIRED	AUTHORIZED
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

5. A. During calendar year 1989, how many drivers in your state were identified with each of the following conditions?

(1) Cardiovascular disorders _____

(2) Diabetes and/or other endocrinal disorder _____

(3) Hearing disorders _____

(4) Seizure disorders _____

(5) Other neurological and/or musculoskeletal disorders _____

(6) Psychiatric disorders _____

(7) Pulmonary disorders _____

(8) Mental retardation _____

B. Please send copies of the applicable statutes or regulations governing each condition that you checked.

C. During calendar year 1989, how many licensed drivers were there in your state? _____

6. Have any studies of the effectiveness of special tests or restrictions for medically-impaired drivers in your state been conducted?

( ) No
( ) Yes (Briefly summarize the findings) _____

_____

_____

_____

_____

7. Please feel free to make any additional comments about the handling of medically-impaired drivers by your state. _____

_____

_____

_____

_____

Thank you for your assistance. Please complete the information below and return the survey to the co-worker who asked you to complete it.

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COMMONWEALTH of VIRGINIA

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RAY D. PETHTEL
COMMISSIONER

IN REPLY PLEASE
REFER TO FILE NO

AT-RISK DRIVER QUESTIONNAIRE:

SUBSTANCE ABUSERS

INSTRUCTIONS. This questionnaire is part of a 50-state survey being conducted by the Virginia Transportation Research Council's Safety Group. It is designed to capture information on the activities that are going on in state motor vehicle agencies to address certain groups of drivers that are considered to be at a higher-than-average risk of crash involvement or conviction for violation of traffic laws. This survey is one of six surveys that are being completed by officials in your agency.

Please take a few minutes to complete the survey. It is fairly straightforward and easy to comprehend. If you feel that copies of policy, state law, etc., would help to answer the questions, please feel free to attach them. Also, feel free to use additional paper as needed. When finished with the questionnaire, please return it to the co-worker from whom it was received so that he/she can collect all six of the surveys and return them to me by March 30. Should you have any questions, please feel free to call me at (804) 293-1919 between the hours of 8:30 a.m. and 4:00 p.m. EDT.

Thank you in advance for your willingness to assist in this effort. Once I have received and analyzed the results from all the states, I shall send your agency a copy of the final report.

Michael E. Worthington
Research Scientist

****

1. Does your state have a procedure for identifying substance-abusing drivers who are not caught driving under the influence (DUI)? (For example, requiring or allowing doctors or drug and alcohol treatment centers to report the names of patients to motor vehicle authorities.)

   ( ) No (Skip to Question #4)
   ( ) Yes (Please Describe) _____

   _____

   _____

   _____

   _____

2. How many drivers were identified through this procedure last year? _____ What percentage of your state's licensed drivers does this number represent? _____

3. Have any studies been done in your state of the effectiveness of these procedures?

( ) No
( ) Yes (Briefly summarize the findings) _____

_____

_____

_____

_____

4. Does your state have special licensing or renewal requirements for substance-abusing drivers not caught for DUI?

( ) No
( ) Yes (Please describe) _____

_____

_____

_____

_____

5. A. Does your state have special state-sanctioned remedial classes for substance-abusing drivers, exclusive of programs for those convicted of DUI?

( ) No
( ) Yes (Briefly describe the nature of the classes/curriculum) _____

_____

_____

_____

_____

B. Are these classes (check one): ( ) Mandatory? ( ) Voluntary? (Briefly describe the incentives to the driver for participation)

_____

_____

6. Does your state use restrictive licenses for controlling substance-abusing drivers who have not been convicted of DUI?

( ) No
( ) Yes (Briefly describe the provisions of statutes, regulations, etc)

_____

_____

_____

_____

_____

7. Please feel free to make any additional comments about the handling of your state's non-DUI substance-abusing drivers.

_____

_____

_____

_____

_____

Thank you for your assistance. Please complete the information below and return the survey to the co-worker who asked you to complete it.

Your Name (please print) _____

Your Title _____

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CHARLOTTESVILLE, 22903

IN REPLY PLEASE
REFER TO FILE NO

AT-RISK DRIVER QUESTIONNAIRE:

NON-ENGLISH SPEAKING AND ILLITERATES

INSTRUCTIONS. This questionnaire is part of a 50-state survey being conducted by the Virginia Transportation Research Council's Safety Group. It is designed to capture information on the activities that are going on in state motor vehicle agencies to address certain groups of drivers that are considered to be at a higher-than-average risk of crash involvement or conviction for violation of traffic laws. This survey is one of six surveys that are being completed by officials in your agency.

Please take a few minutes to complete the survey. It is fairly straightforward and easy to comprehend. If you feel that copies of policy, state law, etc., would help to answer the questions, please feel free to attach them. Also, feel free to use additional paper as needed. When finished with the questionnaire, please return it to the co-worker from whom it was received so that he/she can collect all six of the surveys and return them to me by March 30. Should you have any questions, please feel free to call me at (804) 293-1919 between the hours of 8:30 a.m. and 4:00 p.m. EDT.

Thank you in advance for your willingness to assist in this effort. Once I have received and analyzed the results from all the states, I shall send your agency a copy of the final report.

Michael E. Worthington
Research Scientist

****

1. Does your state have special licensing, testing, or renewal provisions for non-English speaking or illiterate drivers?

   ( ) No (Skip to Question #3)
   ( ) Yes (Briefly describe) _____

   _____

   _____

   _____

   _____

2. Have any studies on the effectiveness of your state's special licensing, testing, or renewal provisions for non-English speaking or illiterate drivers been done?

   ( ) No
   ( ) Yes (Briefly summarize the findings) _____

   _____

   _____

   _____

   _____

3. How many non-English speaking licensed drivers were in your state last year? _____ What percentage of all licensed drivers does this number represent? _____

4. How many illiterate licensed drivers were in your state last year? _____ What percentage of all licensed drivers does this number represent? ____

5. Please feel free to make any additional comments about the handling of non-English speaking or illiterate drivers in your state. _____

   _____

   _____

   _____

   _____

Thank you for your assistance. Please complete the information below and return the survey to the co-worker who asked you to complete it.

Your Name (please print) _____

Your Title _____

Your Phone No. ( ) _____

Your Mailing Address _____

_____

_____

APPENDIX B

Telephone Questionnaires

MOTORCYCLISTS

What special motorcycling licensing or testing procedures are used for new and/or renewal applicants (e.g., MOST)?

Are any special motorcycle rider improvement or crash prevention courses taught in your state? Y N V M

Describe:

Are there any protective clothing, eye safety, or helmet laws in effect?

Details:

DRIVERS UNDER 21

When applicants under 21 apply for an operator's license, are they required to meet special licensing or testing requirements (e.g., Driver Ed.)?

Applicable age:

Requirement(s):

Does your state use provisional or probationary licenses for drivers under 21? If *yes*, what are the provisions?

Are there any driver improvement classes only for drivers under 21 who have had crashes or convictions? Y N V M

Is a lower BAC level used in charging drivers under 21 with DUI? Y N

BAC:

Applicable age:

Special penalties:

Are there any other special traffic offenses that apply to drivers under 21? Y N

What:

RENEWAL APPLICANTS

Are there any special license renewal requirements for drivers above a certain age?

Age:

Requirements:

Are there any special driver improvement or defensive driving classes offered for applicants above specified ages (e.g., AARP 55 Alive)? Y N V M

Age:

Program:

Do these drivers obtain any incentives such as insurance discounts etc.?

Does your state use restricted licenses based on the age of the renewal applicant? Y N

Age:

Requirements:

Are there procedures for the voluntary surrender of an operator's license by older drivers who feel they have become unsafe? Y N

At what age can this procedure be implemented?

Is there a procedure for reporting unsafe drivers by family members, physicians, or others? Y N

Is this age based? Y N

What are the procedures?

MEDICAL

Are medical exams required of some persons before obtaining or renewing an operator's license?

Conditions:

Have there been any changes within the last 2 years regarding driving exams, medical exams, or license restrictions for persons with specific medical conditions? Y N

Details:

Does your state have medical advisory boards? Y N

Are they used in operator's license procedures? Y N

Details:

What are the duties of doctors with regards to informing the licensing agency of persons with certain medical conditions? Required Authorized Voluntary: Protected by statute: Y N

SUBSTANCE ABUSERS

Are there any procedures for reporting persons abusing drugs or alcohol (other than DUI) to the motor vehicle agency (e.g., requiring or allowing doctors or treatment centers to so report)? Y N V M

Describe:

What special licensing or testing procedures are used for license renewal of substance-abusing drivers (NOT DUIs)?

What license restrictions are used for substance-abusing drivers (NOT DUIs)?

LANGUAGE

What special licensing or testing procedures are used for applicants that do not speak English or are illiterate?

Native language test _____

Interpreter _____

Oral test _____

Other _____